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BIOLOGIA CENTRALI-AMERICANA.

INSECTA.

ORTHOPTERA.

Vol. I.

SMITHSONIAN
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BY

Dr. HENRI DE SAUSSURE,

ASSISTED BY

Dr. LEO ZEHNTNER and A. PICTET.

THE FORFICULIDÆ

BY

Count de BORMANS.

1893–1899.

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INTRODUCTION.

THE enumeration of the species of the five Families of Orthoptera here dealt with having already extended to 458 pages, with twenty-one Plates, it has been decided to treat the two remaining families, the Acridiidæ and the Phasmidæ, in a separate volume. All the arrangements for the publication of the present volume have been entirely under the control of Dr. Henri de Saussure, of Geneva, who, on account of his failing eyesight, has been obliged to give up the remainder of the work.

The Forficulidæ have been worked out by Count de Bormans alone.

The Blattidæ and Mantidæ by Dr. Henri de Saussure, in collaboration with Dr. Leo Zehntner.

The Gryllidæ by Dr. H. de Saussure alone.

The Locustidæ by Dr. H. de Saussure, with the assistance of M. Alphonse Pictet.

The Introductory remarks and all the general dissertations on the Blattidæ, Mantidæ, Gryllidæ, and Locustidæ have been contributed entirely by Dr. H. de Saussure. In these Families the author has also described, noticed, or figured various allied North-American or Tropical South-American species for comparison, as it is very probable that some of these will eventually be found to inhabit the region under investigation. These species are throughout the work included in square brackets, though for convenience they are numbered consecutively with the others in the text.

The following is the total number of species enumerated from Central America:—Forficulidæ, forty-one, with eight new; Blattidæ, 156, with sixty new; Mantidæ, sixty-one, with thirty-three new; Gryllidæ, 102, with forty-three new; Locustidæ, 273, with eighty new. The number of species for the five Families being 633, with 224 new.

The Acridiidæ have been undertaken by Professor Lawrence Bruner, of Lincoln, Nebraska, and we hope to commence the publication of Volume II. immediately.

ED.

April 1900.

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† *Capucinus cucullatus* on the Plate.

‡ *Lithaneutria ocularis* on the Plate.

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† *Ceutophilus aztecus* on the Plate.

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* *Calloxiphus championi* on the Plate.

BIOLOGIA CENTRALI-AMERICANA.

ZOOLOGIA.

Class INSECTA.

Order ORTHOPTERA.

Suborder DERMAPTERA*.

Fam. FORFICULIDÆ.

DIPLATYS.

Diplatys, Serville, Ann. Sc. Nat. xxii. p. 33 (1831).

La description du genre *Diplatys* par Serville renfermant plusieurs inexactitudes, il est nécessaire d'en donner ici une nouvelle :—

Caput depressum, latum, postice angustatum, fronte tumidula, oculis valde prominentibus. Antennæ saltem 15-articulatæ: art. 1° sat longo, subconico, apice crasso; 2° cylindrico, brevi, dimidiam partem latitudinis primi æquante; 3° dimidium longitudinis primi paullo superante; 4° tertii tertiam partem attingente, subsphærico; 5° obconico, dimidio primi haud longiore; 6° obconico, tertio æquali; ceteris obconicis, sensim crescentibus. Pronotum capite angustius, fere semicirculare, latitudine propria haud vel vix longius, antice in collum brevissimum protractum, postice rotundatum et leviter attenuatum. Scutellum parvum. Elytra pronoto duplo longiora, postice recte truncata. Alarum squamæ circiter dimidiam partem longitudinis elytri attingentes, angustæ, parte externa coriacea, parte suturali basali triangulari membranacea. Pedes sat longi, graciles; tarsorum articulo 1° secundum tertiumque simul sumpta longitudine æquante; 2° cylindrico, parvo, primi latitudinem æquante, apice leviter bifido; 3° primo parum breviore sed graciliore. Abdomen.—♂ usque ad segmentum octavum cylindricum, sat gracile; segmentis: 8° apice tantum, 9° toto sat inflatis, sed potius dilatatis; ultimo segmento dorsali rectangulari, fere duplo latiore quam longiore, apice sinuato. Plicis 2ⁱ 3ⁱque segmentorum apud fœminam quam apud marem distinctioribus. Segmento penultimo ventrali maximo, quadrato, ultimum totum tegente, margine postico leviter sinuato, dimidia parte antica convexa, dimidia parte postica triangulum deplanatum formante.—♀ haud cylindricum, latius quam in ♂, sat convexum; lateribus fere parallelis usque ad ultimum segmentum dorsale postice attenuatum. Penultimo ventrali segmento maximo, multo longiore quam latiore, toto convexo, dimidia parte antica fere quadrata, dimidia parte posteriori ovato-producta; ultimi segmenti ventralis medio leviter excisi latera postica in formam ovalium lobulorum apparent.—Forcipis crura: ♂ depressa, triquetra, basi breviter dilatata, contiguaque, dehinc ovato-curvata attenuata, apicibus contiguis; margine interno inermi.—♀ basi ipsa contigua, dehinc vix distantia, subplana, inermia, fere recta, apicibus tantum curvatis rursus contiguis. Corpus totum pubescens.

Le pénultième segment ventral est en réalité, chez les deux sexes, très grand, aussi

* By A. de Bormans.

long et même plus long que large. Serville, au contraire, le dit: étroit, transversal. Cette contradiction peut s'expliquer ainsi: Serville a fondé son genre *Diplatys* sur un seul exemplaire (mâle puisque son abdomen était presque cylindrique), en assez mauvais état pour qu'il fût difficile d'en reconnaître le sexe. Or, le sexe se reconnait sans erreur possible, chez les Dermaptères, par le nombre des segments abdominaux apparents, comptés d'abord en dessus, puis en dessous. Il est donc évident que, chez l'individu examiné par Serville, les segments abdominaux étaient en partie détruits, mutilés, peut-être recollés en sens inverse, et que l'auteur a été trompé par rapport à la forme réelle du pénultième segment ventral.

Le type de *Diplatys macrocephala* n'existe plus, mais heureusement la figure donnée par Palisot de Beauvois est parfaitement reconnaissable et concorde absolument avec plusieurs exemplaires intacts de cette espèce (venant de Benin et du Congo) d'après lesquels j'établis cette nouvelle description du genre *Diplatys*.

1. **Diplatys jansoni.** (Tab. I. figg. 1, ♂; 2, ♀.)

Cylindrogaster Jansoni, Kirby, Journ. Linn. Soc., Zool. xxiii. p. 507 (1891)[1].

Hab. Guatémala, Las Mercedes, Panzos (*Champion*); Nicaragua, Chontales[1] (*Janson*); Panama, Bugaba (*Champion*). [♂ ♀.]

L'espèce que j'ai sous les yeux est évidemment celle décrite par Mr. Kirby, car elle correspond exactement à la description de cet auteur; de plus, parmi les nombreux exemplaires en question, quelques-uns portent l'étiquette: "Chontales, Nicaragua (*Janson*)." Or, tous ces exemplaires ont, aux 2e et 3e segments de l'abdomen, des plis tuberculiformes bien distincts; tous leurs autres caractères, du reste, les rangent dans le genre *Diplatys* redécrit ci-dessus. Mr. Kirby n'a décrit que le mâle; la femelle ne diffère que par les caractères génériques.

2. **Diplatys severa,** sp. n. (Tab. I. fig. 3, ♂.)

♂. Longit. corp. 7·50 millim.; forcip. 1·25 millim.

Caput nigrum, ut in *D. jansoni* constructum; antennis 15-articulatis, testaceis. Pronotum nigrum, limbo tenui semicirculari pallido marginatum. Elytra nigra, viridi-æneo obscuro velutino splendore micantia, versus ad quartam partem anticam fascia albido-flava transversa ornata. Alæ albæ, apice nigro. Elytra alæque albo-setulosa. Pedes fusci, genubus fusco-testaceis. Abdomen totum nigrum; forceps pallide testacea.

Hab. Panama, Volcan de Chiriqui 2500′ (*Champion*).

Malgré les différences de taille et de coloration, cette espèce n'est, peut-être, qu'une variété de la précédente; je ne puis résoudre cette question, n'ayant vu qu'un exemplaire de *D. severa*.

ECHINOPSALIS, gen. nov.

Corpus modice convexum; pronoto, elytris, alarum squamis, interdum abdomine toto, setis brevibus, rigidis, præsertim ad latera hirtis. Caput sat convexum, æque latum ac longum; antennæ plus 22-articulatæ: art. 1° parum longo, crasso, obconico; 2° exiguo, cylindrico; 3° primi longitudinem æquante, sed

angustiore; 4°–8° globulosis, secundo parum longioribus; reliquis obconicis, sensim crescentibus, sed semper parvis et vix angustioribus. Pronotum capiti longitudine æquale, latius quam longius, fere quadratum, angulis præsertim posticis rotundatis. Elytra lateribus rectis; alarumque squamæ perfectæ. Pedes breves, femoribus crassis, tibiis tarsisque gracilibus; tarsorum articulo 1° tertii longitudinem æquante, sed illo crassiore, 2° brevissimo, cylindrico, apice leviter bifido. Abdomen: ♀ lateribus fere parallelis; ultimo dorsali segmento subrectangulari, latiore quam longiore; penultimo ventrali segmento multo latiore quam longiore, dimidia parte basali obtuse triangulari, apice ovato-producto; ultimi segmenti medio longitudinaliter fissi fere dimidia parte patente. Forcipis crura subcontigua, sat brevia, crassa, triquetra, subrecta, apice ipso curvato, ut in genere *Psali* constructa.
(Mares ignoti.)

Ce genre nouveau, dont je n'ai vu que deux femelles, l'une du Nicaragua, l'autre du Pérou, est tout voisin du genre *Pyragra*; il s'en distingue par: la tête plus bombée et plus étroite; le pronotum non rétréci antérieurement, plus court, moins arrondi; les pattes plus courtes, sans pelotes visibles entre les griffes, et la forme de la pince.

Il diffère du genre *Echinosoma* par la forme de tout l'abdomen, du dernier segment dorsal, du pénultième segment ventral, et de la pince.

En résumé, les insectes de ce genre ont la moitié antérieure du corps—tête, pronotum, élytres, ailes et pattes—du genre *Echinosoma*, et la moitié postérieure—abdomen et pince—du genre *Psalis*.

(Nous nous sommes assuré, il est presque inutile de le dire, que nos exemplaires ne sont point artificiels, c'est à dire dus à la réunion maladroite de deux moitiés d'insectes divers. Ce cas ne se présente que trop fréquemment lorsque des amateurs inexpérimentés veulent réparer les ruptures causées par les chocs dans de longs voyages.)

1. **Echinopsalis guttata,** sp. n. (Tab. I. fig. 4, ♀.)

Longit. corp. 14 millim.; forcip. 3 millim.

♀. Caput nigrum, clypeo testaceo; antennæ saltem 22-articulatæ, fuscæ, art. 2° et 3° testaceis exceptis. Pronotum nigro-fuscum, lateribus et parte postica late albo-flavo marginatis. Elytra nigro-fusca, macula magna triangulari albo-flava longitudinaliter a basi usque ad medium ornata. Alarum media pars interna fusco-nigra, media pars externa flava. Femorum pars media basalis fusco-nigra, pars apicalis albo-testacea; tibiæ tarsique albo-testacei. Caput, pronotum, elytra, alæ, pedesque pilis fuscis hirsuta. Abdomen fere glabrum, castaneum, ultimo dorsali segmento fere quadrato. Forcipis crura ut in genere *Psali* formata, inæqualia (dextro longiore), castanea, robusta, margine interno denticulato.

Hab. NICARAGUA, Chontales (*Janson*).

PYRAGRA.

Pyragra, Serville, Ann. Sc. Nat. xxii. p. 34 (1831).
Thermastris, Dohrn, Stett. ent. Zeit. xxiv. p. 61 (1863).

1. **Pyragra saussurei.**

Pygidierana Saussurei, Dohrn, Stett. ent. Zeit. xxiii. p. 225, t. 1. fig. 2 (1862)[1].

Hab. MEXIQUE, Cordova (*Saussure*[1]), Atoyac (*Schumann*); HONDURAS BRITANNIQUE, R. Sarstoon (*Blancaneaux*); GUATÉMALA, Zapote, Capetillo (*Champion*), Vera Paz (*Conradt*); COSTA RICA, Caché (*Rogers*). [♂ ♀.]

2. **Pyragra chontalia.**

Thermastris chontalia, Scudder, Proc. Bost. Soc. Nat. Hist. xviii. p. 258 (1876) [1].

Hab. GUATÉMALA, Chiacam en Vera Paz (*Champion*); NICARAGUA, Chontales [1].

[Sexe? (individu privé de pinces).]

PSALIS.

Psalis, Serville, Ann. Sc. Nat. xxii. p. 34 (1831).

1. **Psalis americana.**

Forficula americana, Palisot de Beauvois, Ins. Afr. et Amér. p. 165, Orth. t. 14. fig. 1 (1817) [1].
Labidura americana, Dohrn, Stett. ent. Zeit. xxiv. p. 319 (1863) [2].

Hab. NICARAGUA, Chontales (*Janson*); COSTA RICA [2]. [♀.]—COLOMBIE [2]; VENEZUELA [2]; ANTILLES, Cuba [2], San Domingo [1], Haiti [2].

2. **Psalis gagatina.** (Tab. I. figg. 5, ♂; 6, ♀.)

Forficula (*Psalis*) *gagathina* (Klug, MS.), Burm. Handbuch der Ent. ii. p. 753 (1838) [1].
Labidura gagatina, Dohrn, Stett. ent. Zeit. xxiv. p. 320 (1863) [2].

Hab. PANAMA, Bugaba (*Champion*). [♂ ♀.]—ANTILLES, Porto Rico [1 2].

3. **Psalis thoracica.** (Tab. I. fig. 7, ♀.)

Forficesila thoracica, Serville, Orthoptères, p. 22 (1839) [1].

Hab. PANAMA, Bugaba 800 à 1500′ (*Champion*). [♀.]—GUIANE, Cayenne [1].

CARCINOPHORA.

Carcinophora, Scudder, Entom. Notes, v. p. 31 (1876); Proc. Bost. Soc. Nat. Hist. xviii. p. 291 (1875–1876).

Ce genre, très éloigné du genre *Chelidura*, Latreille, par le nombre et la forme des articles antennaires et la construction du 2e article tarsal, est au contraire compris entre les genres *Psalis* et *Anisolabis*; il diffère presque uniquement du 1r par l'absence d'ailes, et du 2e par l'existence d'élytres bien formées.

1. **Carcinophora robusta.**

Chelidura robusta, Scudder, Proc. Bost. Soc. Nat. Hist. xii. p. 344 (1869) [1]; Entom. Notes, ii. p. 29 (1869) [2].
Psalis colombiana, de Bormans, Étude sur quelques Forficulaires, Ann. Soc. Ent. Belg. xxvii. p. 61, t. 2. figg. 2, 2 *a*, 2 *b* (1883) [3].

Hab. COSTA RICA, Caché (*Rogers*). [♂.]—COLOMBIE [3]; ÉQUATEUR, entre Quito et Napo [1 2].

ANISOLABIS.

Anisolabis, Fieber, Lotos, iii. p. 257 (1853).

1. **Anisolabis janeirensis.** (Tab. I. figg. 8, ♂; 9, ♀.)

Forcinella janeirensis, Dohrn, Stett. ent. Zeit. xxv. p. 285 (1864) [1].

Hab. NICARAGUA, Chontales (*Janson*). [♂ ♀.]—BRÉSIL, Rio Janeiro [1].

2. **Anisolabis annulipes.**

Forficesila annulipes, Lucas, Ann. Soc. Ent. Fr., Bull. p. lxxxiv (1847) [1].

Forficula (*Labidura*) *annulipes,* Fisch. Orthopt. Eur. p. 69, t. 6. figg. 6, *a–c* (1853) [2].

Hab. MEXIQUE, Valle del Maiz (*Dr. Palmer*); NICARAGUA, Chontales (*Janson*). [♂ ♀.] —EUROPE MÉRIDIONALE [2].

3. **Anisolabis azteca.**

Forcinella azteca, Dohrn, Stett. ent. Zeit. xxiii. p. 226 (1862) [1], et xxv. p. 291 (1864) [2].

Hab. MEXIQUE (*Saussure* [1]), Monclova en Coahuila et San Luis Potosi (*Dr. Palmer*). [♂ ♀.]

Ne diffère pas beaucoup de l'espèce précédente.

4. **Anisolabis antoni.** (Tab. I. fig. 10, ♀.)

Forcinella antoni, Dohrn, Stett. ent. Zeit. xxv. p. 289 (1864) [1].

Hab. MEXIQUE, San Luis Potosi (*Dr. Palmer*); GUATÉMALA, Capetillo (*Champion*); NICARAGUA, Chontales (*Janson*). [♀.]—VENEZUELA [1].

5. **Anisolabis maritima.**

Forficula maritima (Bonelli, MS.), Gené, Monogr. Forf. p. 9 (1832) [1].

Forficula (*Labidura*) *maritima,* Fisch. Orthopt. Europ. p. 68, t. 6. figg. 4, 4 *a–d* (1853) [2].

Hab. NICARAGUA, Chontales (*Janson*); COSTA RICA, Caché (*Rogers*); PANAMA, Volcan de Chiriqui 2500 à 4000′ (*Champion*). [♂ ♀.]—EUROPE MÉRIDIONALE [1].

SPARATTA.

Sparatta, Serville, Orthoptères, p. 51 (1839).

1. **Sparatta nigrina.** (Tab. I. figg. 11, ♂; 12, ♀.)

Sparatta nigrina, Stål, Öfv. Vet.-Akad. Förh. xii. p. 350 (1855) [1]; Dohrn, Stett. ent. Zeit. xxvi. p. 70 (1865) [2].

Hab. GUATÉMALA, Chinautla (*Salvin*), Volcan de Fuego 6400′, Sabo en Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*). [♂ ♀.]—BRÉSIL, Rio Janeiro [1 2].

2. **Sparatta schotti.** (Tab. I. fig. 14, ♀.)

Sparatta schotti, Dohrn, Stett. ent. Zeit. xxvi. p. 69 (1865) [1].

Hab. MEXIQUE, Montagnes d'Alvarez (*Dr. Palmer*). [♀.]—BRÉSIL [1].

3. **Sparatta pelvimetra,** var. **rufina.** (Tab. I. fig. 13, ♂.)

Sparatta pelvimetra, Serville, Orthoptères, p. 52 (1839) [1].

Sparatta rufina, Stål, Öfv. Vet.-Akad. Förh. xii. p. 350 (1855) [2]; Dohrn, Stett. ent. Zeit. xxvi. p. 69 (1865) [3].

Hab. GUATÉMALA, Coban en Vera Paz (*Conradt*). [♂.]—BRÉSIL [1], Rio Janeiro [2 3].

Cette variété ne se distingue du type que par le pronotum noir, tandis qu'il est fauve chez l'espèce typique.

4. **Sparatta plana.**

Forficula (*Apachys* ?) *plana* (Illiger, MS.), Burm. Handb. der Ent. ii. p. 752 (1838) [1].

Sparatta plana, Dohrn, Stett. ent. Zeit. xxvi. p. 69 (1865) [2].

Forficula gracilis, Blanchard, Voy. d'Orbigny dans l'Amér. mérid. vi. 2, p. 214, t. 26. fig. 2 (1837–43) [3].

Hab. NICARAGUA, Chontales (*Janson*); COSTA RICA, Caché (*Rogers*). [♂ ♀.]—COLOMBIE; AMAZONES, Pará [1 2]; BOLIVIE [3].

LABIA.

Labia, Leach, Edinb. Encycl. ix. p. 118 (1815).

1. **Labia bilineata.** (Tab. I. figg. 15, ♂; 16, ♀.)

Labia bilineata, Scudder, Proc. Bost. Soc. Nat. Hist. xii. p. 345 (1869) [1].

Hab. PANAMA, Bugaba 800 à 1500′ (*Champion*). [♂ ♀.]—ÉQUATEUR, entre Quito et Napo [1].

2. **Labia chalybea.** (Tab. I. fig. 17, ♀.)

Labia chalybea, Dohrn, Stett. ent. Zeit. xxv. p. 429 (1864) [1].

Hab. COSTA RICA, Volcan de Irazu 6000 à 7000′, Caché (*Rogers*); PANAMA, Bugaba (*Champion*). [♀.]—VENEZUELA [1].

3. **Labia arcuata.** (Tab. I. figg. 18, 20, ♂; 19, ♀.)

Labia arcuata, Scudder, Proc. Bost. Soc. Nat. Hist. xviii. p. 257 (1876) [1].

Hab. MEXIQUE, Orizaba (*H. H. Smith*), Teapa en Tabasco (*H. H. Smith*: variété, ♀, à thorax jaune); GUATÉMALA, Coban en Vera Paz (*Conradt*); NICARAGUA, Chontales (*Janson*). [♂.]—BRÉSIL [1].

4. **Labia rotundata.**

Labia rotundata, Scudder, Proc. Bost. Soc. Nat. Hist. xviii. p. 263 (1876)[1]; de Bormans, Ann. Soc. Ent. Belg. xxvii. p. 75, t. 2. figg. 13, 13 *a–c* [2].

Hab. MEXQUE [1 2]; GUATÉMALA, environs de la ville (*Champion*), Aceytuno 5100′, Dueñas 4950′ (*Salvin*). [♂ ♀.]

5. **Labia championi,** sp. n. (Tab. I. fig. 21, ♂.)

♂. Long. corp. 4·5 millim.; forcip. 1 millim.

Nitida, glabra. Caput fuscum, clypeo flavo; antennæ saltem 10-articulatæ, fuscæ, art. 10° excepto pallido; pronotum trapezoidale, sicut ac caput longum latumque, pallide flavum; elytra castanea; alæ castaneæ basi flavo-guttatæ; pedes pallide flavi; abdomen castaneum, lateribus fere parallelis, ultimo segmento dorsali transverso, rectangulari; pygidium latum, transversum, rectangulare, apice semicirculariter emarginatum: ⊏⊐. Forcipis crura castanea, inermia, inter se remota, parum curvata, apicibus parum distantibus, ut in *L. minore* ♂ constructa.

Hab. PANAMA, Bugaba (*Champion*).

Cette espèce a tout-à-fait la forme générale de *L. minor*.

SPONGOPHORA.

Spongophora, Serville, Ann. Sc. Nat. xxii. p. 31 (*Spongiphora*) (1831).
Psalidophora, Serville, Orthoptères, p. 29 (1839).

1. **Spongophora parallela.**

Forficula parallela (Westw., nec Fabr.), Guérin, Mag. Zool. 1837, t. 178 [1].
Forficesila longissima, Wood, Ins. Abroad, p. 279, fig. 139 (1874) [2].

Hab. MEXIQUE [1], Presidio de Mazatlan en Sinaloa, Ciudad en Durango (*Forrer*), Cordova (*Höge*); GUATÉMALA, El Tumbador, Zapote (*Champion*); NICARAGUA, Chontales (*Janson* [2]); PANAMA, Bugaba, Volcan de Chiriqui 2000 à 3000′ (*Champion*). [♂ ♀ nymphs.]

2. **Spongophora brunneipennis.** (Tab. II. figg. 1, 3, ♂; 2, ♀.)

Psalidophora brunneipennis, Serville, Orthopt. p. 30 (1839) [1]; Dohrn, Stett. ent. Zeit. xxv. p. 418 (1864) [2].

Hab. AMÉRIQUE SEPTENTRIONALE, Pennsylvanie [1 2], Virginie [2].—MEXIQUE, Ventanas en Durango (*Forrer*), Orizaba (*H. H. Smith et F. D. G.*); GUATÉMALA, Cerro Zunil 4000′, Capetillo (*Champion*). [♂ ♀.]

3. **Spongophora pygmæa.** (Tab. II. figg. 4, 5, ♀.)

Psalidophora pygmæa, Dohrn, Stett. ent. Zeit. xxv. p. 421 (1864) [1].

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba 800 à 1500′ (*Champion*). [♂ ♀.]—BRÉSIL, Rio Janeiro [1].

4. **Spongophora rogersi,** sp. n. (Tab. II. fig. 6, ♂.)

♂. Longit. corp. 8 millim.; forcip. 2·50 millim.

Nitida, glabra. Caput nigro-fuscum, ore, antennis 15-articulatis dilutius fuscis. Pronotum trapezoidale, dilute fuscum, marginibus lateralibus angustis testaceis. Elytra fusca. Alæ fuscæ, macula semicirculari pallide flava in media parte basali ornatæ. Femora fusco-testacea, tibiæ tarsique testacei, articulo 1° tarsorum tertio paullo longiore. Abdomen dilute castaneum; pygidium fusco-fulvum, longum (0·65 mill.), in forma linguæ apice vix attenuatæ productum, apice triangulo exciso: ⋃. Forcipis crura fusco-fulva, inter se remota, robusta, triquetra, a basi ad medium fere recta, margine externo basali depresso fere excavato, margine interno pygidium includente emarginato; tum dente interno parvo bicuspide armata, dehinc rotundata, graciliora, sat extus arcuata, usque ad parvum internum dentem ad tres quartas partes longitudinis sitam, deinde paullo crassiora, mucronibus contiguis.

Hab. Costa Rica, Caché (*Rogers*).

Cette nouvelle espèce se distingue de toutes les autres par la forme du pygidium et de la pince.

NEOLOBOPHORA.

Neolobophora, Scudder, Proc. Bost. Soc. Nat. Hist. xvii. p. 281 (1875).

Ce genre n'a aucune trace d'écusson au sommet des élytres; il est tout voisin du genre *Opisthocosmia*, Dohrn, dont il diffère presque uniquement par l'absence d'ailes.

1. **Neolobophora ruficeps.** (Tab. II. figg. 7, ♂; 8, ♀.)

Forficula ruficeps, Burm. Handb. der Ent. ii. p. 755 (1838) [1].
Apterygida ruficeps, Dohrn, Stett. ent. Zeit. xxiii. p. 231 (1862) [2], et xxvi. p. 88 (1865) [3].
Neolobophora volsella, Scudder, Proc. Bost. Soc. Nat. Hist. xviii. p. 257 (1876) [4].

Hab. Mexique [1], Ventanas, Ciudad en Durango (*Forrer*), Orizaba (*Sumichrast* [4]), Cordova (*Saussure* [2]), Atoyac en Vera Cruz (*Schumann*), Omilteme et Amula en Guerrero (*H. H. Smith*); Guatémala, Coban en Vera Paz (*Conradt*); Costa Rica, Caché, R. Sucio (*Rogers*). [♂ ♀ larves.]

2. **Neolobophora bogotensis.** (Tab. II. fig. 9, ♀.)

Neolobophora bogotensis, Scudder, Proc. Bost. Soc. Nat. Hist. xvii. p. 282 (1879) [1]; Ent. Notes, iv. p. 36 (1875) [2].

Hab. Costa Rica, Volcan de Irazu 6000 à 7000′ (*Rogers*); Panama, Volcan de Chiriqui 2500 à 4000′ (*Champion*). [♀.]—Colombie, Bogota [1 2].

Ne diffère pas beaucoup de l'espèce précédente.

OPISTHOCOSMIA.

Opisthocosmia, Dohrn, Stett. ent. Zeit. xxvi. p. 76 (1865).

1. **Opisthocosmia americana,** sp. n. (Tab. I. figg. 22, 23, ♂.)

♂ ♀. Longit. corp. 9 millim.; ♂ forcip. 6 millim., ♀ 5 millim.

Caput opacum, nigrum, pentagonale, æque longum ac latum, sat planum, disco excepto tumidulo, suturis

circumvallato, margine postico subrecto; oculis nigris, prominentibus; antennis saltem 10-articulatis, articulis 1° et 2° fuscis, 3° et 4° albo-flavis, ceteris fuscescentibus. Pronotum nitidum, nigrum, marginibus lateralibus albidis, capite angustius, longius quam latius, rectangulare, margine postico leviter rotundato. Elytra pronoto plus duplo longiora et latiora, sat tumidula, rubro-testacea, margine postico recto. Alæ dimidio elytri haud longiores, fuscæ, puncto flavido medio elytro contiguo, alteroque minuto apice interno ornatæ. Femora tibiæque testacea (interdum genubus infuscatis), pilis tenuibus et pallidissimis hirsuta; tarsi fusci, art. 1°, 2° 3°que simul sumptis paullo longiore, 3° dimidio primi vix breviore. Abdomen: ♂ rubro-castaneum, postice dilutius, glabrum, vix dilatatum, sed potius inflatum, segmentum ultimum versus; plicis 2i 3ique segmentorum nigris, fere spiniformibus; ultimo segmento dorsali trapezoidali, postice angustiore necnon valde declivo, margine postico tumidulo cum puncto medio impresso, angulis lateralibus valde productis.— ♀ latius, postice dilatatum, sed haud inflatum.—Pygidium, ♂ ♀, superne haud prominens, subtus ut globulum in medio segmenti penultimi ventralis in **V** fissi apparens. Forcipis crura rubro-castanea.— ♂ inter se remota, intus summa basi dilatata, tum ovato-curvata, leviter deflexa, in hujus ovalis medio valde compressa, deinde horizontalia (interdum reflexa), approximata, fere recta, necnon in formam angustæ laminæ dilatata; mucronibus acutis longe ante apicem decussatis; margine interno toto denticulato, in medio dente triangulari armato; versus tertiam partem basalem valida triangularis spina sursum erecta surgit.— ♀ testacea, postice infuscata, vix basi inter se distantia, deinde contigua, margine externo pilis pallidis tenuissimis sat longis hirsuto, margine interno toto tenuiter crenulato.

Hab. MEXIQUE, Teapa en Tabasco (*H. H. Smith*). [♂.]—HAUTES AMAZONES.

J'ai pu décrire la femelle d'après un exemplaire de ma collection, provenant ainsi qu'un mâle du Haut-Amazone.

ANCISTROGASTER.

Ancistrogaster, Stål, Öfv. Vet.-Akad. Förh. p. 349 (1855); Scudder, Ent. Notes, v. p. 28 (1876).

1. Ancistrogaster luctuosus.

Ancistrogaster luctuosus, Stål, Öfv. Vet.-Akad. Förh. xii. p. 349 (1855)[1]; Eug. Resa, Zool., Ins. p. 306, t. 5. fig. 1 (1858)[2].

Hab. GUATÉMALA, Las Mercedes 3000′, Cerro Zunil 4000 à 5000′, Volcan de Atitlan 2500 à 3500′ (*Champion*); PANAMA, Volcan de Chiriqui 2500 à 4000′ (*Champion*). [♂.] —BRÉSIL, Rio Janeiro [1 2].

2. Ancistrogaster spinax.

Ancistrogaster spinax, Dohrn, Stett. ent. Zeit. xxiii. p. 229, t. 1. figg. 1, 1 *b* (1862)[1].

Hab. MEXIQUE (*Saussure* [1]), Orizaba (*H. H. Smith et F. D. G.*); GUATÉMALA, Coban en Vera Paz (*Conradt*). [♀.]

3. Ancistrogaster variegatus. (Tab. II. fig. 10, ♂.)

Opisthocosmia variegata, Dohrn, Stett. ent. Zeit. xxvi. p. 78 (1865)[1].

Forficula appendiculata ?, Charp. MS. [*cf.* Gerst. Bericht Ent. p. 90 (1855)][2].

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*). [♀.]—AMÉRIQUE MÉRIDIONALE [2], Venezuela [1].

4. **Ancistrogaster toltecus.** (Tab. II. figg. 11, ♂; 12, ♀.)

Forficula tolteca, Scudder, Proc. Bost. Soc. Nat. Hist. xviii. p. 261 (1876) [1].

Hab. MEXIQUE (*Sumichrast* [1]), Orizaba (*H. H. Smith et F. D. G.*), Atoyac en Vera Cruz (*Schumann*); GUATÉMALA, Coban en Vera Paz (*Conradt*). [♂ ♀.]

5. **Ancistrogaster championi,** sp. n. (Tab. II. fig. 13, ♂.)

♂. Longit. corp. 12 millim.; forcip. 7·7 millim.

Glaber, nitidulus. Caput antennæque (articuli 6 supersunt) nigra. Pronotum ut caput latum longumque, postice rotundatum, fuscum, marginibus lateralibus obscure testaceis. Elytra castanea, pronoto duplo longiora, lateraliter haud rotundata, sed angulo recto plicata. Alæ fuscæ; basi, macula flava media ovali, apice, puncto minuto flavo ornatæ. Abdomen castaneum, a basi usque ad medium valde dilatatum, a medio ad ultimum segmentum attenuatum. Segmentorum 2^i, 3^i, 4^i, 5^i, 6^i, 7^i lateribus posticis plica spiniformi consueta productis (hæ plicæ potius verticales latitudinem abdominis haud superant). Ultimum segmentum dorsale transversum, brevissimum, medio excavatum; margine postico sinuato, supra forcipis radices tuberculo magno rotundato, ad angulum externum plica magna obliqua cristæformi instructum. Forcipis crura castanea, robusta, cylindrico-triquetra, tota distantia, basi ipsa intus spinis cylindricis consuetis magnis, ad medium dente acuto magno, ad duas tertias partes longitudinis dente minore internis armata, a basi arcuata reflexaque, deinde usque ad secundum dentem fere parallela et parum deflexa, dehinc intus angulo-curvata, fere recta usque ad apices contiguos typice bimucronatos unciformesque.

Hab. PANAMA, Volcan de Chiriqui 2500 à 4000′ (*Champion*).

6. **Ancistrogaster impennis,** sp. n. (Tab. II. figg. 14, ♂; 15, ♀.)

Long. corp. ♂ ♀ 11·50 millim.; forcip. ♂ 6·25 millim., ♀ 4·25 millim.

Glaber, parum nitidus. Caput fusco-nigrum, antennis 12-articulatis fuscis. Pronotum ut caput latum, latitudine parum longius, rectangulare, margine postico rotundato, fuscum, marginibus lateralibus pallidioribus. Elytra fusca ut pronotum longa, vixque latiora, postice oblique intus truncata. Alæ nullæ. Pedes sordide testacei. Abdomen fusco-castaneum.—♂ a basi ad medium valde dilatatum, a medio ad ultimum segmentum attenuatum. Segmentorum 4^i, 5^i, 6^i, 7^i lateribus posticis in angulos falciformes consuetos, sed depressos et parum abdominis latitudinem superantes, extus productis; segmentum quartum solum plica spiniformi ut in specie præcedente instructum. Ultimum dorsale segmentum duplo latius quam longius, lateribus valde emarginatis, margine postico ovato, tumidulum, linea media longitudinali impressa, supra forcipis radices tuberculo rotundato sat magno, angulis posticis extus triangulo haud acuto productis.—♀ a basi ad medium dilatatum, a medio ad apicem attenuatum. Ultimum dorsale segmentum parvum, transversum, fere ovale, tumidulum, impressione longitudinali media.—Forcipis crura fusco-castanea.—♂ robusta, præsertim basi, tota distantia, ovato-curvata, apicibus typicis contiguis, pars ovalis medio compressa, apicem versus crassior; basi ipsa intus spinis cylindricis consuetis armata, deinde margine interno irregulariter tenuiterque denticulata.—♀ longa, tota contigua, sat gracilia, apice ipso decussata.

Hab. MEXIQUE, Xucumanatlan en Guerrero 7000′ (*H. H. Smith*).

FORFICULA.

Forficula, Linné, Syst. Nat. ed. x. 1, p. 423 (1758).

Ce genre ne comprend plus aujourd'hui que les espèces chez lesquelles les branches des pinces du mâle sont contigues ou presque contigues, assez déprimées, et denticulées à la base, puis recourbées. C'est le groupe no. 3 de M. Dohrn (genre *Forficula*).

1. **Forficula lugubris.**

Forficula lugubris, Dohrn, Stett. ent. Zeit. xxiv. p. 230 (1862) [1]; de Bormans, Ann. Soc. Ent. Belg. xxvii. p. 87, t. 2. figg. 21, 21 *a–b* (1883) [2].

Hab. MEXIQUE [2], Ventanas et Ciudad en Durango (*Forrer*), Orizaba (*H. H. Smith et F. D. G.*), Cordova (*Saussure* [1]), Omilteme, Tepetlapa, et Chilpancingo en Guerrero, Cuernavaca en Morelos, Teapa en Tabasco (*H. H. Smith*), Valladolid en Yucatan (*Gaumer*); GUATÉMALA, Vera Paz (*Conradt*). [♂ ♀.]

2. **Forficula (?) smithi,** sp. n. (Tab. II. fig. 16, ♂.)

♂. Longit. corp. 9·75 millim.; forcip. 4·50 millim.

Glabra, parum nitida. Caput nigrum, tumidulum; antennis fuscis saltem 11-articulatis: articulo 1° longissimo, cylindro-conico; 2° cylindrico, brevissimo; 3° cylindro-conico, quintum cylindricum æquante; 4° obconico duas tertias partes quinti vix attingente; ceteris fere cylindricis sensim crescentibus. Pronotum fuscum, marginibus lateralibus obscure testaceis, ut caput latum, fere quadratum, postice leviter rotundatum. Elytra alæque forma typica; elytra fusca, pronoto plus duplo longiora, sed paullo latiora. Alæ breves, ovato-triangulares, nigræ. Pedes obscure testacei, postici solito longiores (ut in genere *Ancistrogastri*). Abdomen obscure castaneum, antice, a basi angusta usque ad segmentum penultimum, ovato-dilatatum, ultimum dorsale segmentum trapezoidale, margine postico angustiore, leviter sinuato, angulis lateralibus leviter acute productis, puncto medio impresso. Penultimo segmento ventrali typico, postice pilis fulvis densis hirsuto; pygidium parvum, globulosum, nigrum. Forcipis crura obscure castanea, robusta, triquetro-cylindrica, basi ipsa intus fortiter dilatata, tantum a pygidio separata, tum mox attenuata, divergentia, ovate extus curvata, ad duas tertias partes longitudinis dente minuto intus armata, mucronibus approximatis sed non contiguis. (Hæc forceps ut in *Forficula smyrnensi*, Serv., constructa est.)

Hab. MEXIQUE, Cuernavaca en Morelos (*H. H. Smith*).

L'habitus de cette insecte, la longueur relative des articles antennaires et des pattes postérieures, rapprochent cette espèce des *Ancistrogaster*; l'absence d'épines ou plis spiniformes aux segments de l'abdomen, et la structure de la pince, l'éloignent de ce genre. Il faudrait pour fixer sa position avoir plus d'un exemplaire sous les yeux.

SPHINGOLABIS.

Sphingolabis, de Bormans, Ann. Soc. Ent. Belg. xxvii., Tableau Syn. des genres des Forficulaires, no. 25 (1883).

La diagnose du tableau synoptique cité ci-dessus doit être ainsi rectifiée et complétée:—

Forcipis crura in ♂ basi remota, plerumque subteretia; elytra semper perfecte explicata, alæ explicatæ vel deficientes. Omnibus aliis notis characterici cum genere *Forficula* hoc genus congruit. Feminæ omnino speciebus *Forficularum* similes.

Lorsque j'ai établi ce genre, je rangeais (bien qu'à regret), d'après l'autorité de Herr Brunner de Wattenwyl, les *Forficula*: *albipennis*, Meg., et *arachidis*, Yersin, dans le genre *Chelidura*, Latr.; mais l'examen de diverses espèces exotiques: *tæniata*, Dohrn, *californica*, Dohrn, etc., m'a montré qu'on ne pouvait séparer génériquement ces dernières des *F. albipennis*, etc. Il a donc fallu créer au moins un genre nouveau (deux, en admettant le genre *Apterygida*, Westwood, mais tous les auteurs ont supprimé ce dernier, sauf Mr. Kirby dans son ouvrage récent: 1891).

Ce genre *Sphingolabis* répond au 1r groupe des *Forficula* de M. Dohrn : Pinces du mâle écartées à la base, cylindriques, assez uniformément courbées en dedans jusqu'à leur pointe. (Cependant la *S. furcifera*, de Borm., a les branches de la pince aplaties, quoique bien écartées à la base.)

La caractéristique de ce genre a le très grand défaut de s'appliquer aux mâles seuls ; il est impossible de savoir si une femelle reçue séparément est une *Forficula* ou une *Sphingolabis*.

1. **Sphingolabis tæniata.** (Tab. II. figg. 17, 19, ♂ ; 18, ♀ .)

Forficula tæniata, Dohrn, Stett. ent. Zeit. xxiii. p. 230 (1862) [1].

Hab. MEXIQUE, Sonora septentrionale (*Morrison*), Monclova en Coahuila, San Luis Potosi (*Dr. Palmer*), Presidio de Mazatlan en Sinaloa, Ciudad et Ventanas en Durango (*Forrer*), Mirador (*Saussure* [1]), Orizaba (*H. H. Smith et F. D. G.*), Jalapa (*M. Trujillo*), Atoyac en Vera Cruz, Omilteme, Chilpancingo, et Amula en Guerrero, Cuernavaca en Morelos, Teapa en Tabasco (*H. H. Smith*), Oaxaca (*Brunner* [1]), Valladolid en Yucatan (*Gaumer*) ; GUATÉMALA, Zapote, Capetillo (*Champion*), Coban en Vera Paz (*Conradt*) ; NICARAGUA, Chontales (*Janson*) ; COSTA RICA (*Van Patten*) ; PANAMA, Bugaba, Volcan de Chiriqui (*Champion*). [♂ ♀ .]—AMÉRIQUE MÉRIDIONALE.

Cette espèce est en outre répandue dans presque toute l'Amérique du Sud.

2. **Sphingolabis californica.** (Tab. II. fig. 20, ♂ .)

Forficula californica, Dohrn, Stett. ent. Zeit. xxvi. p. 85 (1865) [1].

Hab. AMÉRIQUE SEPTENTRIONALE, California [1].—MEXIQUE, Sonora septentrionale (*Morrison*), Teapa en Tabasco (*H. H. Smith*). [♂ ♀ .]

3. **Sphingolabis arachidis.**

Forficula arachidis, Yersin, Ann. Soc. Ent. Fr. (3) viii. p. 509, t. 10. figg. 33-35 (1860) [1].

Forficula wallacei, Dohrn, Stett. ent. Zeit. xxvi. p. 88 (1865) [2].

Forficula (*Apterygida*) *gravidula*, Gerst. Arch. f. Naturg. xxxv. 1, p. 221 (1869) [3] ; Glied.-Fauna Sans. p. 50, t. 3. fig. 9 (1873) [4].

Hab. MEXIQUE, Teapa en Tabasco (*H. H. Smith*). [♀ .]—AFRIQUE ORIENTALE, Mombas [3] ; NOUVELLE GUINÉE [2].

Cette espèce est presque cosmopolite et amenée par les vaisseaux chargés d'arachides etc. dans toutes les contrées, même en Europe.

J'ai examiné au Musée de Genève les types de Yersin, et le savant M. Dohrn a eu la bonté de me communiquer le type de *F. wallacei* ; quant à *F. gravidula*, Gerst., elle est facilement reconnaissable d'après la description et la figure.

Suborder ORTHOPTERA GENUINA *.

Fam. BLATTIDÆ †.

For the classification of this family we have followed in a general way the excellent work of Herr Brunner von Wattenwyl, 'Nouveau Système des Blattaires,' and his 'Revision du Système des Orthoptères,' in which he has introduced some modifications of his former system. Nevertheless, we have been obliged to give here a Conspectus of the tribes and genera, as it was necessary to introduce several modifications in the method of the author, particularly in regard to the American Blattidæ and to the disposition of the new genera.

Many species are very vagrant, finding their way into habitations, storehouses, merchandise, and ships, and are thus readily transported from one country to another. Some are quite cosmopolitan, and this has induced us to enumerate a number of species inhabiting the Antilles and South America which may possibly be found in Central America; others we have mentioned to avoid confusion with allied species of the central parts of America; the names of these are placed within square brackets.

Nomenclature of the Elytra and Wings ‡.

Elytra: 1. *Campi.* (Tab. IV. fig. 13.)—*c*, campus marginalis; *d*, campus discoidalis; *a*, campus analis; *b*, area basalis (campi marginalis).

2. *Venæ.* (Tab. IV. figg. 1, 16; Tab. V. figg. 9, 14.)—*n*, vena mediastina; *d*, vena discoidalis; *c*, venæ costales; *m*, vena media; *m'*, *m''*, ejus rami; *u*, vena ulnaris; *s*, sulcus analis; *δ*, vena diagonalis (adventiva).

Alæ: 1. *Campi.* (Tab. IV. fig. 18; Tab. V. fig. 15.)—A, campus anterior; I, R, campus posterior;

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* By Dr. Henry de Saussure and Dr. Leo Zehntner.

† Principal works referred to for this family:—

C. Brunner de Wattenwyl, 'Nouveau Système des Blattaires.' Vienne, 1865.

H. de Saussure, 'Mémoires pour servir à l'Histoire Naturelle du Mexique, des Antilles, etc.' IIIe mémoire, Blattides. Genève, 1864.

H. de Saussure, 'Mélanges Orthoptérologiques,' Genève; tome i., 1er fascicule (1863), 2e fascic. (1869), tome ii., 4e fascic. (1872).

H. de Saussure, 'Mission scientifique au Mexique et dans l'Amérique centrale, ouvrage publié par ordre du Ministère de l'Instruction publique. Recherches Zoologiques, publiées sous la direction de M. Milne-Edwards:' Orthoptères. Paris, 1870.

C. Stål, "Recherches sur le Système des Blattaires." (Bihang till k. Svenska Vet.-Akad. Handlingar, vol. ii. No. 13. Stockholm, 1874.)

C. Brunner de Wattenwyl, 'Revision du Système des Orthoptères.—Description des espèces rapportées par L. Fea.' Genova, 1893.

‡ See also H. de Saussure, 'Prodromus Œdipodiorum' (Genève, 1884), pp. 13 *et seq.*

I, campus intermedius vel axillaris; R, campus radiatus; *i*, campus intercalatus; *p*, campus appendicularis. (Tab. IV. fig. 10.)

Campus anterior per venam discoidalem in campum marginalem et campum discoidalem dividitur.

2. *Venæ.* (Tab. IV. figg. 5, 6, 8, 18, 23.)—*h*, v. humeralis; *d*, v. discoidalis; *c*, venæ costales; *m*, v. media; *u*, v. ulnaris anterior; *u'*, v. ulnaris posterior; *a*, v. analis vel dividens: *x*, v. axillaris; *r*, venæ radiatæ.

3. *Areæ.* (Tab. IV. fig 7.)—*s*, area medio-discoidalis; *t*, area ulnaris.

Conspectus tribuum.

1. Femora subtus spinosa, saltem intermedia et posteriora.
   2. Ultimum segmentum ventrale ♀ planum, apice haud compresso-rostratum.
      3. Lamina supra-analis ♀ ♂ brevissima, transversa, vel modice producta, latior quam longior, haud prominula. Alæ quando condite explicatæ, apice campo membranaceo intercalato trigonali, vel campo appendiculari, in requiete replicatis, instructæ. Femora postica et intermedia subtus in margine antico spinis 2 armata. Ultimum segmentum ventrale ♀ nonnunquam rotundato-compressum, ac fissum.—ANAPLECTINÆ.
      33. Lamina supra-analis ♀ ♂ plus minus producta. Alæ campo apicali replicato nullo. Femora postica et intermedia in utroque margine spinosa.
         4. Lamina supra-analis ♀ triangularis, integra vel incisa, cerci illam valde superantes.
            5. Pronotum et elytra glabra. Tarsi pulvillis destituti. Alarum vena media ramos paucos ad apicem emittens. Campus marginalis venulis costalibus parallelis in vena discoidali pectinatis, obsitus.—BLATTINÆ.
            55. Pronotum et elytra sericeo-velutina. Tarsi pulvillis instructis. Alæ in longitudinem multiramosæ, campo marginali irregulariter in longitudinem venoso. —NYCTOBORINÆ.
         44. Lamina supra-analis plus minus incisa, prominula, rotundata vel bilobata, vel haud prominula, transverse quadrata, vel trapezino-rotundata, angulis obtusis. Cerci breviusculi, laminam supra-analem haud vel parum superantes. Tarsi pulvillis distinctis instructi. Alarum vena ulnaris ramos parallelos numerosos ad venam dividentem emittens.
            5. Pronotum in alatis postice arcuatum.—EPILAMPRINÆ.
            55. Pronotum postice truncatum, scutellum liberans.—*Nauphœta* ex parte.
   22. Ultimum segmentum ventrale ♀ transverse divisum, ejus pars postica compresso-rostrata, fissa, bivalvis. Cerci et pulvilli tarsorum variabiles.—PERIPLANETINÆ.
11. Femora, saltem intermedia et posteriora, subtus inermia, rare parum spinosa.
   2. Femora omnia subtus inermia.
      3. Alæ apice campo intercalato trigonali vel appendiculari, in requiete replicato, instructæ, vel campo anteriore apice acuminato; campo posteriore amplo, illum amplectens, ramos numerosos in tota longitudine emittens. Lamina supra-analis transversa, vel trigonalis, vel rotundata.—PLECTOPTERINÆ.
      33. Alæ normales, campo apicali replicato nullo, campo anteriore apice rotundato vel truncato.

4. Alarum campus analis in requiete flabellatim plicatus. Pronotum et elytra glabra; arolia inter ungues normalia.
   5. Lamina supra-analis bilobata vel quadrata, plus minus emarginata; abdominis segmentorum anguli producti.—PANCHLORINÆ.
   55. Lamina supra-analis ♀ rotundata. Segmenta dorsalia abdominis margine postico transverso, angulis haud productis. Lamina infra-genitalis ♂ stylis mox nullis, mox 2 instructa *.—PERISPHÆRINÆ.

44. Alarum campus posterior haud plicatus vel uniplicatus, sub campo anteriore plane reversus. Pronotum et elytra plus minus pilosa vel fimbriata. Arolia inter ungues minuta vel nulla.—CORYDINÆ.

22. Femora anteriora subtus inermia vel spinis parum numerosis armata.
   3. Arolia inter ungues perspicua.—*Rhicnoda*, Br. (ex parte).
   33. Arolia inter ungues nulla. Species magna parte grandes.
      4. Lamina supra-analis ♀ ♂ plus minus quadrata, incisa. Elytra quando condite explicata, marginem abdominis valde superantia. Cerci variabiles.—BLABERINÆ.
      44. Lamina supra-analis ♀ ♂ transversa, rotundata, integra. Elytra abbreviata (vel nulla), vel angusta, in requiete abdominis margines liberantia. Cerci brevissimi. —PANESTHINÆ.

Tribus ANAPLECTINÆ †.

Ectobidæ, Brunner de Wattenwyl, Syst. Blatt. p. 52.
Ectobites, Saussure, Miss. Scient. Mex., Orthopt. p. 11.

Synopsis generum.

1. Elytra coriacea. Alæ perfecte explicatæ.
   2. Alarum campus replicatus parvus, triangularis, membranaceus, intercalatus.
      3. Elytra coriacea, acuminata, vena longitudinali unica, venis reliquis obliquis in vena longitudinali pectinatis.—ECTOBIA, auct.
      33. Elytra subcoriacea, apice rotundata, venis longitudinalibus mediis 2, venis campi discoidalis longitudinalibus vel parum obliquis.—THEGANOPTERYX, Br.
   22. Alarum campus replicatus magnus, rotundatus, in apice alæ articulatus, semicoriaceus, in longitudinem plica divisus; vena ulnari indivisa.—ANAPLECTA, Br.
11. Elytra cornea, abdominis longitudine vel squamiformia. Alæ rudimentariæ vel nullæ.—APHLEBIA, Br.

ECTOBIA, Westw. et auct.

1. **Ectobia lapponica,** Linn. et auct.

Species vulgaris in toto orbi diffusa.

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* In most species we find 2 styli, which are sometimes a little unequal. Rarely we find only 1, but in these cases the other is certainly broken off, the point of insertion being easily seen. A few species seem to have no styli, or if present they are very small and difficult to make out.

† *Vide infra*, observations 1 and 2, under the Tribe Plectopterinæ.

[2. **Ectobia livida,** Fabr. et auct.

This European species has been found in South America, and will most probably overrun the whole of the New World.]

THEGANOPTERYX, Brunn.

Theganopteryx, Brunner de W. Syst. Blatt. p. 53; Saussure, Mélang. Orthopt. i. 2e fasc. p. 49.
Pseudectobia, Saussure, ibid. pp. 49, 54.

The genera *Theganopteryx* and *Pseudectobia* are connected by so many transitional forms, that they may be treated as one *.

Elytra venis longitudinalibus saltem 2: vena media longitudinalis, a vena discoidali distincta; campi discoidalis venæ numerosæ, longitudinales vel oblique pectinatæ.

Synopsis specierum.

1. Alarum vena ulnaris haud ramosa, indivisa vel furcata.—THEGANOPTERYX, Br., Sss.
   a. Pronotum posterius arcuatum, scutellum obtegens. Pronotum castaneum.—1. *fallax,* Sss.
   aa. Pronotum posterius subrectum, scutellum liberans. Pronotum flavo-marginatum.—[2. *pilosella,* sp. n.]
11. Alarum vena ulnaris ramosa (Tab. IV. fig. 18). Pronotum postice subrectum, scutellum liberans.—PSEUDECTOBIA, Sss.
   a. Pronotum utrinque testaceum. Elytra elongata.
      b. Pronoti discus castaneus. Elytrorum campi discoidalis venæ oblique subpectinatæ.—3. *subpectinata,* sp. n.
      bb. Pronoti discus castaneus, luteo-picturatus; vel testaceus, fusco-punctatus. Elytrorum campi discoidalis venæ longitudinales.—[4. *antiguensis,* sp. n.]
   aa. Pronotum totum fusco-nigrum. Elytra brevia, campi discoidalis venæ oblique subpectinatæ.—[5. *intermedia,* sp. n.]

1. **Theganopteryx fallax,** Sauss.

Theganopteryx fallax, Saussure, Mélang. Orthopt. i. 2e fasc. p. 53. 4 (♂) (1869).

♂. Minuta, atra, nitida; ocellis flavis. Pronotum circumcirca flavo-marginatum, margine posteriore leviter arcuato. Elytra ferruginea, apice subacuminata, margine costali luteo; campi discoidalis venæ longitudinales 5–6, alterisque spuriis intercalatis. Alæ amplæ ac breves, fusco-nebulosæ, margine costali infuscato; venis costalibus longe leviter incrassatis; vena ulnari curvata, indivisa; vena axillari 3-ramosa. Area triangularis apicis minuta, campum anteriorem vix superans. Coxæ luteo-marginatæ; spinæ pedum ferrugineæ. Abdomen anguste luteo-marginatum; lamina supra-analis late trigonalis, apice rotundata.
Long. 7; elytr. 7·5, pronot. 2·5, latit. pronot. 3 millim.

Hab. MEXICO.

* *Erratum.*—Apud Saussure, Mél. Orth. *l. c.*, the line "bord postérieur du prothorax arqué, recouvrant l'écusson" belongs to **a.** *Theganopteryx*, not to **b.** *Pseudectobia.*

[2. **Theganopteryx pilosella,** sp. n.

Gracillima, fusco-rufa. Antennæ fuscæ, ultra medium annulo albido (art. 6). Caput fusco-castaneum, ore pallido, vertice rufescente. Pronotum corneum, trapezinum, fusco-castaneum, margine anteriore et posteriore subarcuatis; lateralibus deflexis. Scutellum nigrum, a pronoto haud obtectum. Elytra elongata, angusta, fusco-ferruginea, basi infuscata; margine costali subsinuato; campo discoidali venis longitudinalibus 6, quadrato-reticulato; campo anali corneo, subreticulato-punctato. Pronotum et elytra griseo-pilosa. Alæ subhyalinæ, fusco-rufo nebulosæ ac venosæ, area apicali trigonali sat magna. Venæ costales 8 haud incrassatæ; venæ disci rectæ; vena ulnaris ante medium furcata, apice reconciliata, basi ramulum incompletum posteriorem emittens; vena axillaris apice bis furcata. Pedes graciles, pallide testacei; coxis basi fuscis; spinis et tibiarum apice fusco-ferrugineis. (Sexus ?)

Long. 12; elytr. 10·4, pronot. 2, latit. pronot. 2·9 millim.

Hab. CENTRAL PERU, Tarma.

This species is remarkable on account of its very slender form and its pubescent pronotum and elytra. *T. pilosella* much resembles *Ischnoptera inca*, but differs from it in the colour of the antennæ, the pronotum being almost without impressions, the pubescent elytra not having false intercalated veins, and also in the neuration of the wings.]

3. **Theganopteryx (Pseudectobia) subpectinata,** sp. n. (Tab. IV. fig. 18.)

♂. Gracilis, piceo-testacea. Caput castaneum, vertice convexo, ore testaceo. Pronotum transverse ellipticum, pellucenti-testaceum, disco toto et margine postico castaneis, hoc vix arcuato, sulcis disci profunde impressis. Elytra angusta, elongata, apice rotundata, rufo-castanea, parum opaca; margine costali decolore. Venæ longitudinales mediæ 2 parallelæ: vena discoidalis ramos costales rectos longiusculos emittens vena media ramos obliquos 7–8 ad marginem suturalem emittens. Campus discoidalis quadrato-reticulatus; areis inter ramos per venas spurias divisis; campus analis apice rotundatus; vena analis vix sinuata, ad 3^{am} partem marginis suturalis desinens vel ante illam. Alæ leviter infuscatæ, inter venas lineis pallidis. Venæ costales apice nodosæ; vena ulnaris ramos 4 ad marginem apicalem emittens. Area trigonalis apicis minima. Pedes testacei, femoribus et tibiis supra linea brunnea marginata. Femora anteriora ut in typo *Platamode* spinulosa *. Abdomen plus minus testaceum. Lamina supra-analis complete transversa, brevissima. Cerci longiusculi, fusci. Lamina infra-genitalis rotundata, stylis 2 brevissimis.

Long. 7·75; elytr. 9, pronot. 1·6, latit. pronot. 2·8 millim.

Hab. GUATEMALA, Capetillo (*Champion*; 2 ♂).

[4. **Theganopteryx (Pseudectobia) antiguensis,** sp. n.

♀. Testacea; caput fusco-marmoratum, vertice maculis 2–3 fuscis. Antennæ testaceæ, apice fuscæ. Pronotum ellipticum, testaceum, disco et margine postico fuscis, testaceo-punctato et amœne picturato, impressionibus discoidalibus obsoletis. Elytra elongata, testacea, leviter rufo-fusco-umbrata; vena humerali basi et vena anali fuscis. Campus discoidalis in longitudinem 4-venosus, quadrato-reticulatus, in parte obtecta elytri dextri fusco-reticulatus; areis in elytro sinistro per venas spurias nullas divisis. Venulæ transversæ campi marginalis et discoidalis in medio interruptæ. Campus analis piriformis, subacutus, venis axillaribus 4 ultra 3^{am} partem marginis suturalis attingens. Alæ leviter nebulosæ, venis fuscis, venulis costalibus 6 apice ovato-nodosis; venæ media et ulnaris leviter arcuatæ, binæ furcatæ; campus replicatus apicis sat minutus. Pedes ad spinas fusco-punctati. Cerci testacei, basi, articulo antepenultimo et apice fuscis. Lamina supra-analis transversa, in medio compressa. Lamina infra-genitalis parabolica, apice anguste rotundata, utrinque subsinuata, in medio conico-convexa.

♀. Long. 7·3; elytr. 8, pronot. 1·8, latit. pronot. 3 millim.

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* Comp. *infrà*, under the Tribe Blattinæ, p. 30.

Var. Caput et pronotum testacea, minute fusco-punctata. Alæ nebulosæ, venis fuscis; campo anteriore et intermedio fusco-reticulatis; vena media indivisa, vena ulnari biramosa. Cerci testacei, basi et apice fusci. (Cuba.)

Hab. ANTILLES, Cuba, Antigua.]

[5. **Theganopteryx (Pseudectobia) intermedia,** sp. n.

♀. Crassiuscula, fusco-nigra. Caput sat prominulum, ocellis nullis; vertex inter oculos latiusculus. Pronotum corneum, leviter bi-impressum, marginibus lateralibus deflexis, arcuatis. Elytra cornea, fusco-nigra, parum elongata, abdomen tamen superantia, margine costali arcuato; campus discoidalis oblique pectinato-venosus, elevato reticulatus; campus analis fere ad dimidium marginem suturalem attingens, sulco anali vix sinuato. Alæ breves ac amplæ, fuscæ, margine anteriore et apicali obscurioribus; apice inter campos sinuato; area intercalata apicali minima; venulæ costales 11, fere tota longitudine vix incrassatæ; venæ media et ulnaris arcuatæ, hæc apice bis furcata vel biramosa. Campus intermedius venulis transversis vix ullis. Pedes picei, spinis testaceis. Abdomen?

Long. cum elytris 10; elytr. 7·3, pronot. 2·2, latit. pronot. 3 millim.

Hab. CENTRAL PERU, Tarma.

Of the same colour as *Theganopteryx fallax*, but very different in the neuration of its wings. *T. intermedia* might, at first sight, be referred to the genus *Blatta*, owing to the rudimentary triangular reflexed field of the wings; but the style of venation is more that of *Theganopteryx*, and the femora have only a few spines, as in the Anaplectinæ.]

ANAPLECTA, *Burm.*

Anaplecta, Burmeister, Saussure, Brunner de W.

Insecta gracilia vel crassiuscula. Pronotum ellipticum, minutum vel mediocre. Elytra abdomen superantia, valde coriacea, sulco anali profundo, campo anali acuto. Vena discoidalis recta, indivisa; venæ campi discoidalis paucæ, longitudinales. In speciebus crassis elytra venis longitudinalibus tantum 2, parallelis; venis campi discoidalis obliquis sed haud pectinatis. Alæ campo appendiculari parabolico instructæ. Femora parum spinosa; anteriora in margine posteriore longe pilosa, reliqua spinis 2 : 2 armata.—Ultimum segmentum ventrale ♀ frequenter apice compressum ac fissum. Lamina supra-analis ♀ transversa, saltem haud producta. Cerci longiusculi.

Synopsis specierum.

I.

a. Species testaceæ, saltem elytris testaceis vel fusco-umbratis.

b. Graciles; pronoto minuto; elytris elongatis, abdomen valde superantibus, apice attenuatis. (Tab. IV. fig. 1.) Insecta in requiete itaque postice attenuata.

c. Elytra tota testacea.

d. Fascia obliqua fusca discoidali ad venam analem.—1. *mexicana,* Sss.

dd. Omnino testacea.—[2. *peruviana,* sp. n.]

cc. Elytra campo anali fusco.

d. Pronoti disco flavido.—4. *tolteca,* Sss.

dd. Pronoti disco fusco-bivittato.—3. *nahua,* Sss.

bb. Crassiores; elytris abdomen vix vel parum superantibus. (Tab. IV. fig. 16.) Insecta in requiete elliptica.

c. Minores, modice crassæ, parum convexæ.

d. Minutæ, totæ fulvo-rufo-testaceæ. Elytra venis discoidalibus crassiusculis, venulis costalibus normalibus, rectis.

e. Elytra apice rotundata, venis costalibus numerosis, confertis. Vena media ramos 3 emittens. Alæ hyalinæ, campo appendiculari rotundato.—14. *domestica*, sp. n.

ee. Elytra acuminata, margine suturali recto, costali valde arcuato, campo marginali lato, venis costalibus remotis, reticulatis. Vena media furcata; campo anali frequenter fusco. Alæ apice infuscatæ, campo appendiculari acute parabolico. —[15. *alaris*, sp. n.]

dd. Minus parva. Elytra venis subtilibus, venulis costalibus baseos longissimis, confertissimis, arcuatis, flabellatis. (Tab. IV. fig. 13.) Fulvo-testacea, vel pronoto et elytris fusco umbratis.—21. *flabellata*, sp. n.

cc. Major, crassa, valde convexa, tota fulvo-testacea. Elytra venis longitudinalibus tantum 2 subtilibus; campo discoidali oblique venoso.—19. *fulgida*, Sss.

aa. Species castaneæ.

b. Elytrorum venæ campi discoidalis, ut solitum, crassiusculæ, longitudinales.

c. Pronoti margines laterales hyalino- vel testaceo-pellucentes.

d. Elytra elongata, apice rotundata, late hyalino-marginata; lamina supra-analis trigonalis.—[5. *moxa*, Sss.]

dd. Elytra abdomen parum superantia. Insecta in requiete elliptica, anguste albido- vel testaceo-limbata.

e. Majores, alis infuscatis.

f. Elytra testaceo-marginata, apice ad marginem suturalem acuminata, venis costalibus et discoidalibus paucis, gracilioribus. Alarum campus appendicularis sat grandis, basi subrectus.—17. *elliptica*, sp. n.

ff. Elytra basi albido-marginata. Alæ campo appendiculari minuto.

g. Major. Alæ nigræ, campo appendiculari obtuso, basi angulato. Lamina supra-analis ♀ trigonalis, fissa.—18. *dohrniana*, sp. n.

gg. Minor. Alæ pallide infuscatæ, campo appendiculari parabolico, basi transverso. Lamina supra-analis transversa, arcuata.—8. *azteca*, Sss.

ee. Minutæ, elytrorum margo plerumque tota longitudine albido. Alæ hyalinæ vel nebulosæ.

f. Paulo majores.

g. Alarum campus appendicularis sat minutus.

h. Elytra apice rotundato, testaceo. Alæ subhyalinæ.

i. Major. Elytra abdomen superantia; alæ illis longiores.—9. *fallax*, Sss.*

ii. Minor. Elytra abdomen haud superantia; alæ minutæ.—13. *parvipennis*, sp. n.

hh. Elytra ad marginem suturalem subacuminata, valde reticulata. (Tab. IV. fig. 11.) Alæ nebulosæ, campo appendiculari parabolico. —16. *decipiens*, sp. n.

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* *A. lateralis*, Brunner (from South America), seems very close to *A. fallax*, but has more pointed elytra and wings (*vide* p. 30).

gg. Alæ hyalinæ, campo appendiculari longiore quam latiore; elytra apice rotundato.—12. *albomarginata*, sp. n.

ff. Minimæ; alis hyalinis, campo appendiculari longissimo. Elytra margine costali testaceo.

g. Alarum campus appendicularis reliquæ alæ sensim brevior.—[10. *replicata*, sp. n.]

gg. Alarum campus appendicularis reliquæ alæ sensim æquilongus.—[11. *grandipennis*, sp. n.]

cc. Pronotum totum fusco-opacum. Elytra angusta, subacuminata, venis campi discoidalis longitudinalibus crassiusculis, 4–5.

d. Media; alæ nebulosæ, campo appendiculari minore, vix 3^{am} partem longitudinis alæ æquali.—[7. *otomia*, Sss.]

dd. Maxima; alæ flavicantes, campo appendiculari magno.—[6. *major*, sp. n.]

bb. Elytra venis longitudinalibus tantum 2, illis campi discoidalis gracilibus; vena media vel ulnaris oblique ramosa.

c. Elongato-elliptica; elytris basi testaceo-marginatis. Alæ nigræ. Lamina supra-analis trigonalis, incisa.—18. *dohrniana*, sp. n.

cc. Crassa, convexa; elytris totis castaneis; alis subhyalinis.—20. *jansoni*, sp. n.

II.

1. Elytra:

a. Venulæ costales campi marginalis regulares, rectæ, obliquæ, breves.

b. Elytra angusta, venis longitudinalibus crassiusculis; vena discoidali recta, venulas valde obliquas apice subincrassatas, ad costam emittente. Campus discoidalis venis longitudinalibus 3–5 ad apicem perductis (scilicet ramis 2–4 venæ mediæ et vena ulnari). (Tab. IV. fig. 1.)

c. Venæ disci omnes longitudinales.

d. Vena mediastina brevis, marginem costalem medium haud attingens.

e. Elytra angusta, abdomen valde superantia. Insecta in requiete postice attenuata.

f. Grandis; campus discoidalis elytri venis longitudinalibus 5.—[6. *major*.]

ff. Mediocris; campus discoidalis elytri venis longitudinalibus 4 (vel 3).

g. Venulæ costales circ. 12–14; primæ valde, ultimæ minus obliquæ. (Tab. IV. fig. 1.)—1. *mexicana*; [2. *peruviana*]; 4. *tolteca*; [5. *moxa*.]

gg. Venulæ costales omnes parallelæ.—3. *nahua*.

ee. Elytra abdomen minus vel parum superantia. Insecta in requiete anguste elliptica.

f. Alæ normales, abdomine et elytris valde longiores.—7. *otomia*; 8. *azteca*; 9. *fallax*; [10. *replicata*]; [11. *grandipennis*]; 12. *albomarginata*; 14. *domestica*.

ff. Alæ minutæ, abdomine et elytris vix longiores.—13. *parvipennis*.

dd. Vena mediastina elongata, venulis costalibus minus numerosis (5–9). Elytra apice ad marginem suturalem acuminata, margine suturali recto, costali apice

arcuato; campo discoidali venis longitudinalibus tantum 3 (vena media tantum furcata). (Tab. IV. fig. 11.)

e. Apex elytri acutus; campus discoidalis inter venas venis spuriis nullis.

f. Vena mediastina medium marginem vix attingens. Venulæ costales proximæ, regulares, circ. 7, ultimæ irregulares. Areæ inter illas venis spuriis reticulatæ.—[15. *alaris*.]

ff. Vena mediastina medium marginem attingens vel superans. Venulæ costales tantum 5–6, remotæ, 1ª longissima, ultimæ subtiles, areis inter illas latis, reticulatis.—17. *elliptica*.

ee. Apex elytri hebetatus; campus discoidalis venis spuriis inter venas instructus, reticulosus. Venulæ costales regulares. (Tab. IV. fig. 11.)—16. *decipiens*.

cc. Vena media basi furcata, ejus rami ramulos obliquos ad marginem suturalem emittentes.—18. *dohrniana*.

bb. Elytra brevia, lata, venis longitudinalibus tantum 2 parallelis (discoidali et media); campus marginalis latior, $\frac{2}{5}$ latitudinem elytri efficiens. Venæ costales regulares, graciles, omnes parallelæ; vena media irregularis, ramos obliquos 3–4 ad secundam partem marginis suturalis emittens. Venæ omnes graciles, excepto venæ mediastina et analis. (Tab. IV. fig. 16.)—19. *fulgida*; 20. *jansoni*.

aa. Campus marginalis latissimus, dimidiam latitudinem elytri efficiens; vena discoidalis basi fortiter retro-arcuata, dehinc longitudinalis, undulata. Venulæ costales primæ 5 vel 6 longæ, arcuatæ, invicem proximæ, flabellatæ; reliquæ rectæ, obliquæ (nonnunquam furcatæ). Vena media a basi in ramos longitudinales undulatos soluta (4–5), in margine desinentes. Venæ omnes graciles. (Tab. IV. fig. 13.)—21. *flabellata*.

2. Alarum campus appendicularis:

a. major, margine basali transverso (Tab. IV. figg. 5, 8, &c.):

b. longior quam latior.—[6. *major*]; [10. *replicata*]; [11. *grandipennis*]; [15. *alaris*]; 17. *elliptica*.

bb. brevior quam latior.—8. *azteca*; (14. *domestica*); (16. *decipiens*, ♂); 19. *fulgida*; 21. *flabellata*.

aa. minor, margine basali obtusangulo (Tab. IV. figg. 7, 9 &c.):

b. parum angulato.—1. *mexicana*; [2. *peruviana*]; 4. *tolteca*; [5. *moxa*]; 7. *otomia*; (8. *azteca*); 9. *fallax*; 12. *albomarginata*; 13. *parvipennis*; 14. *domestica*; 16. *decipiens*, ♀; 18. *dohrniana*; 19. *fulgida*; 20. *jansoni*; 21. *flabellata*, var.

bb. valde angulata.—3. *nahua*.

3. Alarum venulatio:

a. Campus marginalis apice haud dilatatus. Area medio-discoidalis per venulas transversas divisa. (Tab. IV. fig. 2.)

b. Campus marginalis apice attenuatus; vena discoidali apice antrorsum deflexa.

c. Campus marginalis plerumque angustus. Area medio-discoidalis in parte apicali per venam longitudinalem divisa. (Tab. IV. figg. 2, 7, 10.)

d. Ultima venula transversa (Tab. IV. fig. 2, *o*) angulata, venam longitudinalem ab angulo emittens.

e. Vena longitudinalis elongata, 3ªm partem areæ æquans.—1. *mexicana*; [2. *peruviana*]; 4. *tolteca*; 8. *azteca*.

ee. Vena longitudinalis brevior, 4^{am} partem areæ æquans.—3. *nahua*; 7. *otomia*; 9. *fallax*; 12. *albomarginata* (brevis); 16. *decipiens*.

dd. Ultima venula transversa (Tab. IV. fig. 4, *o*) obliqua, venam longitudinalem (longiusculam) ab ejus apicem posticam emittens; hæc itaque frequentius obliqua.—[5. *moxa*]; 12. *albomarginata*.

cc. Campus marginalis latus.—14. *domestica*.

bb. Campus marginalis apice haud sensim attenuatus; vena discoidali tota recta; area medio-discoidalis tota per venulas transversas divisa. (Tab. IV. fig. 6.) Areæ ulnares binæ plerumque latiusculæ, distinctissimæ.—[6. *major*]; 18. *dohrniana*; 19. *fulgida*; 20. *jansoni*; 21. *flabellata*.

aa. Campus marginalis a medio ad apicem dilatatus, vena discoidali recta (cum vena spuria humerali haud confundenda). Area medio-discoidalis lata, per venulas transversas paucas vel tantum una, divisa. (Tab. IV. figg. 5, 12.)

b. Ultima venula transversa (*o*) areæ medio-discoidalis venam unicam longitudinalem longiusculam emittens. Ultima venula transversa:

c. angulata. (Tab. IV. fig. 12.)—[10. *replicata*]; 13. *parvipennis*.

cc. recta, obliqua, venulam longitudinalem ab ejus apice postico emittens. (Tab. IV. fig. 5.)—[11. *grandipennis*.]

bb. Ultima venula transversa areæ medio-discoidalis subapicalis, arcuata, cum vena discoidali in arcum continua, venulas 2–3 brevissimas longitudinales vel obliquas emittens. (Tab. IV. fig. 8.)—[15. *alaris*]; 17. *elliptica*.

4. Lamina supra-analis, ♀:

a. Paulum producta:

b. trigonalis:

c. transverso-trigonalis,

d. apice leviter truncata.—[5. *moxa*.]

dd. integra.—19. *fulgida*; 21. *flabellata*.

cc. trigonalis, fissa, vel incisa, apice bilobata.—18. *dohrniana*.

bb. rotundata:

c. subparabolica.—7. *otomia*; 21. *flabellata*.

cc. obtuse rotundata.—1. *mexicana*; [2. *peruviana*]; [15. *alaris*].

aa. Transversa, margine postico transverse arcuato.—4. *tolteca*; 8. *azteca*; 9. *fallax*; [10. *replicata*]; [11. *grandipennis*]; 12. *albomarginata*; 13. *parvipennis*; 14. *domestica*; 17. *elliptica*.

Sectio I.

Elytra venis costalibus rectis, brevibus; venis campi discoidalis longitudinalibus, regularibus, rare ramosis.

1. **Anaplecta mexicana,** Sauss. (Tab. IV. figg. 1, 2.)

Anaplecta mexicana, Sauss. Miss. Scient. Mex., Orthopt. p. 15. 2, t. 1. figg. 9, 9 *a*, 9 *e* (♂ ♀) (1870).

Testacea; abdomine, pronoti disco vittaque obliqua elytrorum ad venam analem fuscis; vertice et maculis 2 pronoti flavidis. Pronotum minutum, perfecte ellipticum, ejus maxima latitudo in media longitudine occurrens. Elytra angusta, elongata, apice acuminato-rotundata; vena media a basi in ramos 3 divisa. Alæ infuscatæ, campo intermedio apice flavo, campo marginali obscuro, margine frequenter flavo; venis

costalibus apice elongato-clavatis ; areæ medio-discoidalis venulis transversis tantum 3. Campus appendicularis ♀ ♂ quartam partem longitudinis alæ æquans, paulo latior quam longior, apice ♀ parabolicus, ♂ rotundatus. Lamina supra-analis ♀ transversa, rotundata, ♂ paulo major, rotundato-trapezina.
Long. 8 ; elytr. 8·5, pronot. 2, latit. pronot. 3·5 millim.

Hab. Mexico, Eastern Cordillera, Orizaba, Rio Blanco.

The wings have been figured for comparison with those of other species.

[2. **Anaplecta peruviana,** sp. n.

A. mexicanæ simillima, testacea, abdomine fusco. Vertex inter oculos vitta transversa nigra. Pronoti discus brunneus, maculis nullis. Elytra vitta obliqua fusca nulla, vena mediastina et basi venæ humeralis, fuscis ; (vena media haud a basi divisa, sed ad medium bis furcata). Alæ infuscatæ, illis *A. mexicanæ* similes, campo appendiculari tamen acutiore, subtrigonali ; venulis transversis areæ medio-discoidalis 5.
Long. cum elytr. 11, alæ 9·5 millim.

Hab. Peru.]

3. **Anaplecta nahua,** Sauss.

Anaplecta nahua, Sauss. Miss. Scient. Mex., Orthopt. p. 14. 1, t. 1. fig. 11 *a*.

Sat minuta, gracilis, testacea. Pronotum antice leviter attenuatum, disco vittis 2 longitudinalibus fuscis. Elytra angusta, elongata, fulvo-testacea, quam in *A. mexicana* apice magis acuminata ; vitta longitudinali fusca campum analem et basin campi discoidalis occupans, dehinc anguste inter venam ulnarem et ramum posticum venæ mediæ plus minus producta, marginem suturalem liberante ; vena media tantum basi furcata, ramos tantum 2 efficiens. Alæ fusco-nebulosæ, campo marginali apiceque campi intermedii, plus minus infuscatis, venis costalibus 6 apice fulvis, crasse clavatis ; vena media apice furcata ; area medio-discoidali transverse venosa. Campus appendicularis sat minutus, basi obtusangulus.
Long. cum elytr. 6–7 ; elytr. 5·5, pronot. 1·5, latit. pronot. 2·4 millim.

Hab. Mexico, Eastern Cordillera.

4. **Anaplecta tolteca,** Sauss.

Anaplecta tolteca, Sauss. Miss. Scient. Mex., Orthopt. p. 16. 3.

♀. Testacea, superne infuscata, fronte inter oculos vitta fusca. Pronoti discus fulvus, marginibus lateralibus late hyalinis. Elytra angusta, apice rotundata, castanea, apice fulva, campo costali partim late pellucido ; vitta obliqua in vena anali testaceo-hyalina ; venis disci 3–4 complete longitudinalibus ut in *A. mexicana*. Alæ illis *A. mexicanæ* simillimæ, infuscatæ, fusco-nebulosæ, campo appendiculari fusciore, campo costali et margine appendicis fuscis. Lamina supra-analis margine transverse arcuato ; cerci testacei.
Long. 6 ; elytr. 6·5, pronot. 1·6, latit. pronot. 2·5 millim.

Hab. Mexico, Eastern Cordillera.

[5. **Anaplecta moxa,** sp. n. (Tab. IV. figg. 3, 4.)

A. mexicanæ formis simillima, elytris apice paulo obtusioribus.
♀. Fusco-castanea. Antennæ piceæ. Caput subtus et pedes testacea ; vertex et occiput fusca. Pronotum paulo minus ellipticum, antice leviter attenuatum scilicet ejus latitudo maxima pone medium occurrens, margine posteriore leviter arcuato, disco castaneo, marginibus lateralibus late pellucidis. Elytra castanea, elongata, angusta, apice rotundata, margine costali magna parte hyalino ; venis campi discoidalis longitudinalibus 4. Alæ tota fuscæ, de reliquo illis *A. mexicanæ* simillimæ. Abdomen fuscum ; lamina supra-analis trigonalis, apice leviter truncata. Ultimum segmentum ventrale compressum, fissum.
Long. 7·2 ; elytr. 8, pronot. 1·9, latit. pronot. 2·7 millim.

Hab. Peru, Tarma (*Mus. Genavense*).]

[6. **Anaplecta major,** sp. n. (Tab. IV. fig. 6.)

♀. Species maxima generis, fusco-castanea; ore testaceo; antennis fuscis; ocellis nullis. Pronotum minutum, margine anteriore et posteriore subrectis, totum opacum, marginibus haud hyalinis; disco bisulcato, margine postico punctis impressis 2. Elytra elongata, apice rufescentia, venis prominulis; campo discoidali venis longitudinalibus 5. Alæ grandes, flavicantes, area costali et campo appendiculari flavo-aurantiis. Vena discoidalis valde furcata, ejus ramus anterior (v. humeralis) campum marginalem latum partim dividens. Pars marginalis flava, venis costalibus elongato-incrassatis; pars posterior campi marginalis hyalina, ante apicem desinens, per venulas transversas 4 divisa. Area medio-discoidalis latissima per venulas transversas 5–6 reticulata. Area ulnaris angusta, per venulas 2–3 divisa, vena media apice venulam obliquam anteriorem emittens. Campus appendicularis grandis, longior quam latior, parabolicus, tertiam partem longitudinis alæ efficiens. Pedes fusci. (Femora anteriora et intermedia spinis 3·0, posteriora 2·0.) Abdomen supra sordide testaceum, marginibus fuscis; subtus fuscum, in medio pallidius. Lamina supra-analis transversa, rotundato-trapezina, testaceo-ciliata,

Long. 10; elytr. 10, pronot. 3·2, latit. pronot. 4 millim.

Hab. PERU, Tarma.]

7. **Anaplecta otomia,** Sauss.

Anaplecta otomia, Sauss. Mélang. Orthopt. i. 2e fasc. p. 58, t. 3. fig. 18 * (♀) (1869); Miss. Scient. Mex., Orthopt. p. 18. 5.

Fusco-nigra vel fusco-castanea; antennis et abdomine fuscis. Caput fusco-nigrum. Pronotum margine postico transverso, marginibus lateralibus subopacis, in perlucidate fuscis. Elytra sat angusta, apice attenuata, venis longitudinalibus crassis, venis costalibus regularibus, circ. 10, apice incrassatis, ultimis clavatis. Alæ leviter fusco-fulvo-nebulosis, ad costam anguste infuscatæ, venis costalibus apice elongato-clavatis; area medio-discoidalis venulis transversis 3–4; campo appendiculari mediocri, basi vix angulato. Pedes fusco-testacei. Lamina supra-analis producta, parabolica, ultimum segmentum ventrale æquans; hoc parum compressum.

Long. 6·5; elytr. 6, pronot. 1·75, latit. pronot. 2·4 millim.

Hab. MEXICO.

A species very distinct on account of its dark colour and pale wings, and its pronotum having the lateral margins nearly opaque. The elytra are nearly of the type as those of *A. mexicana,* but less elongated.

8. **Anaplecta azteca,** Sauss.

Anaplecta azteca, Sauss. Miss. Scient. Mex., Orthopt. p. 17. 4 (♀ ♂), t. 1. figg. 10, 10 *a* (♂) (1870).

Statura mediocri, fusco-castanea; pedibus testaceis. Antennæ brunneæ. Caput testaceum, vitta frontali transversa, vertice et occipite fuscis. Pronotum perfecte ellipticum, disco fusco-nigro, prope basin macula obsoleta testacea vel flavida; marginibus lateralibus late pellucidis. Elytra margine costali anguste testaceo. Alæ totæ infuscatæ, margine costali ad venulas clavatas anguste flavido; area medio-discoidali venulis transversis 2; campo appendiculari acutiore, parabolico, æque longo ac lato, basi vix angulato. Abdomen fuscum, cercis fusco-testaceis. Lamina supra-analis transversa, brevis, margine arcuato, lamina infra-genitalis ♂ grandis, prominula, parabolica, plus minus testacea.

Long. 6·5; elytr. 5·8, pronot. 2, latit. pronot. 2·5 millim.

Hab. MEXICO, Eastern Cordillera, Orizaba, Rio Blanco.

* This figure is not satisfactory, the pronotum being too orbicular and too much separated from the elytra.

9. **Anaplecta fallax,** Sauss. (Tab. IV. fig. 7.)

Anaplecta fallax, Sauss. Mém. du Méx., Blatt. p. 51. 2 (♀) (1864); Brunner de W. Syst. Blatt. p. 66. 7 (1865).

Anaplecta lateralis, Sauss. Miss. Scient., Orthopt. p. 19. 7, t. 1. fig. 13 (♀) (1872).

♀. Corpus in requiete ovatum. Fusco-castanea; antennis pallidioribus; pedibus testaceis. Caput fuscum Pronotum antice leviter attenuatum, marginibus lateralibus hyalinis, disco fusco, sat magno. Elytra abdomen superantia; costa albo-marginata, apice testacea, venulis costalibus parallelis8–1 0. Alæ, ut solitum, elytris sensim longiores, hyalinæ, campo marginali fulvescente, venis costalibus 6–7 apice elongato-clavatis; area medio-discoidali venula transversa unica. Campus appendicularis 3am vel 4am partem longitudinis alæ efficiens, rotundatus, paulo minus longus quam latus, parte antica majore; subhyalinus, margine basali obtusissime angulato. Coxæ basi vel fere totæ infuscatæ. Abdomen basi piceum; cerci testacei; lamina supra-analis ♀ transversa, arcuata; infra-genitalis parum compressa, convexa, fissa, quando deplicata bilobata, lobis trigonali-rotundatis.

Long. 4·6; elytr. 4, pronot. 1·5, latit. pronot. 2·25 millim.

Hab. MEXICO (*Sumichrast*); GUATEMALA (*coll. Guérin*).—COLOMBIA.

Very similar to *A. azteca*, but smaller, and with differently formed hind wings. Compare also with *A. decipiens* and *A. parvipennis*.

[10. **Anaplecta replicata,** sp. n. (Tab. IV. fig. 12.)

? *Blatta minutissima,* De Geer, Ins. iii. p. 542. 10, t. 44. figg. 13, 14.

A. grandipenni simillima, paulo minor, abdomine infuscato. Differt præcipue per alas:—Alæ hyalinæ, campo marginali fuscescente, margine fulvo; venis costalibus 8, quarum 6 apice minute fusco-clavatis. Area medio-discoidalis per venulas 2–3 divisa, 3a fracta, venam longitudinalem emittente. Campus appendicularis grandis, parabolicus, longior quam latior, quam pars basalis alæ brevior, hyalinus vel leviter fulvescens, margine basali recto. ♂ ♀.

Long. 4·4; elytr. 4·25, pronot. 1·5, latit. pronot. 2 millim.

Hab. BRAZIL, Pernambuco.

Differs from *A. grandipennis* in the appendix of the wings being not so large, rather narrower, and in the neuration of the anterior field being more complete. Nevertheless, it may be a variety of the same species.]

[11. **Anaplecta grandipennis,** sp. n. (Tab. IV. fig. 5.)

Minima, gracilis, fusco-castanea; ore, pedibus et abdomine testaceis. Antennæ fusco-testaceæ. Pronoti margines laterales latius, elytrorum margo costalis angustius, hyalino-pellucidi. Alæ hyalinæ, campo marginali et apice campi discoidalis leviter fulvis; venæ costales paucæ, 4–5, minime clavatæ; area medio-discoidalis haud transverse venosa, per venulam transversam obliquam prope apicem clausa. Campus appendicularis maximus, dimidiam longitudinem alæ efficiens, longior quam latior, parabolicus, basi transversa, recta; subhyalinus, parte anteriore leviter fulvescente. ♂ ♀.

Long. 4·25; elytr. 4, pronot. 1·5, latit. pronot. 2 millim.

Hab. BRAZIL, Pernambuco.

This species is remarkable for the enormous appendix of its wings, which makes the basal part of these organs extremely short and with very few veins. The appendix is still larger than in *A. replicata.*]

12. **Anaplecta albomarginata,** sp. n.

♀. *A. decipienti* simillima, eadem pictura, abdomine tamen basi testaceo. Differt ab illa:—Formis gracilioribus; elytris sensim angustioribus, apice regulariter rotundatis, margine costali minus arcuato; campo discoidali tantum apice reticulato. Alæ hyalinæ, venis costalibus fulvescentibus, campo appendiculari sat grandi, longiore quam latiore, hyalino, margine basali subrecto. Ultimum segmentum ventrale apice haud compressum, sed rotundato-tumidum, fissum. (Venæ campi discoidalis in elytro sinistro longitudinales; vena media in elytro dextro oblique triramosa.)

Long. 5; elytr. 5, pronot. 1·5, latit. pronot. 2 millim.

Hab. MEXICO, Tabasco (*H. H. Smith*).

13. **Anaplecta parvipennis,** sp. n.

Minuta, statura *A. grandipennis*, nigro-castanea, antennis, pedibus et cercis testaceis. Pronoti margines laterales hyalino-pellucentes. Elytra abdomen haud superantia, margine costali albo, apicali testaceo, apice rotundato, margine costali arcuato, margine suturali tantum apice arcuato. Alæ minutæ, fusco-nebulosæ, ad marginem costalem fusciores; campo appendiculari brevi, rotundato, breviore quam latiore, margine basali vix angulato. Area medio-discoidalis venula transversa unica angulata, venam longitudinalem sat brevem, obliquam, emittens. Lamina supra-analis transversa.—*Variat.* Alis vix infuscatis.

Long. 4·8; elytr. 3·4, pronot. 1·3, latit. pronot. 2·2 millim.

Hab. MEXICO, Tabasco (*H. H. Smith*).

Of the same facies as *A. azteca*, *A. replicata*, *A. grandipennis*, *A. decipiens*, *A. albomarginata*, and *A. fallax*, but distinct from all these (*A. azteca* excepted) on account of the wings being one half shorter and the elytra narrower. Smaller than *A. decipiens*, with the elytra more rounded at the tip and not reticulated, and the wings with shorter appendicular field. A little larger than *A. replicata* and *A. grandipennis*, with very differently formed wings (comp. synopsis specierum II. 2, *anteà*, p. 21). Distinguished from *A. albomarginata* by the shorter elytra, infuscated wings with shorter appendicular field, &c. It is quite similar to *A. fallax*, only the elytra are a little shorter, not longer than the abdomen, and the wings one half smaller, a little more infuscated, with the appendicular field a little shorter and the longitudinal venula of the end of the medio-discoidal area shorter and oblique. *A. parvipennis* is remarkable for its small hind wings—when extended reaching scarcely to the end of the abdomen—being scarcely longer than the elytra. It is the only known species possessing this character.

14. **Anaplecta domestica,** sp. n.

♀. Minuta, statura *A. fallacis*; crassiuscula, rufo-castanea vel rufescens, subtus rufo-testacea; pedibus plus minus testaceis. Antennæ rufo-testaceæ. Pronotum leviter bi-impressum, marginibus lateralibus totis hyalino-testaceis. Elytra abdomen vix superantia, apice subacuminato-rotundato, margine costali arcuato, suturali recto; margine costali saltem basi testaceo; campi discoidalis venis longitudinalibus. Alæ hyalinæ, venis testaceis; area medio-discoidali venulis transversis 1–2 vel ante apicem venula unica obliqua, ut in *A. grandipenne.* Campus appendicularis hyalinus, rotundatus, æque longus ac latus, mediocris, plus quam 3ª parte longitudinis reliqui alæ æqualis. Lamina supra-analis brevis, transversa.

Long. 4·6; elytr. 3·8, pronot. 1·75, latit. pronot. 2·25 millim.

Hab. GUATEMALA, in the city (*Champion*).

A species very like *A. alaris*, but with the elytra more rounded at the tip, with the

costal field not so broad, occupied by numerous regular, approximated, and parallel costal veins. The costal margin is not much arcuate. The hind wings are also differently formed in the two species.

[15. **Anaplecta alaris,** sp. n.

Sat minuta, statura *A. domesticæ* et illi sat similis. Fulvo-rufescens. Caput fuscum. Antennæ fusco-testaceæ. Pronotum ellipticum, disco aurantio, impressionibus perspicuis; marginibus lateralibus latiuscule fulvo-testaceo-pellucentibus. Elytra abdomen parum superantia, aurantio-testacea, area basali leviter pallidiore, campo anali et basi campi discoidalis infuscatis; apice acuminato; margine suturali recto, costali valde arcuato. Campus marginalis latus, venulis costalibus 6–7, ultimis irregularibus sat transversis, invicem remotis; inter illas venulis spuriis plus minus reticulatis intercalatis. Venæ costales prope basin per venulam transversam conjunctæ. Campus discoidalis reticulatus, vena media furcata, ramo 3° obsoleto. Alæ leviter infuscatæ, campo marginali apice leviter infuscato, venulis costalibus 5. Area medio-discoidalis per venulam transversam unicam obliquam mediam et apice per venulam longitudinalem arcuatam divisa; hæc venulas obliquas brevissimas emittens. Campus appendicularis magnus, parabolicus, ut in *A. elliptica* (comp. Tab. IV. fig. 8) sed apice acutior, infuscatus, parte antica obscuriore ejus vena postica apicem haud attingens, sed fere ad $\frac{2}{3}$ longitudinis *fracta, oblique ad marginem posticum ducta*. Pedes testacei. Abdomen infuscatum, subtus rufescens. Cerci testacei, ultimum segmentum ventrale apice valde compressum. Lamina supra-analis sat producta, rotundata.

Long. cum elytr. 5·3; elytr. 4·5, pronot. 1·4, latit. pronot. 1·8 millim.

Hab. Peru (*Mus. Genavense*).]

16. **Anaplecta decipiens,** sp. n. (Tab. III. fig. 5; Tab. IV. figg. 10, 11.)

♀. Sat minuta, tota nigro-castanea, antennis piceis, pedibus testaceis; pronoti lateribus hyalinis. Elytra abdomen vix superantia, acuminato-rotundata, margine suturali recto, marginali arcuato, margine costali toto anguste albido; campus analis 3^{am} partem marginis suturalis attingens; campi discoidalis areæ per venas spurias divisæ, ac reticulatæ. Alæ subhyalinæ, campo marginali obscuriore, venis costalibus 5-6 fuscis apice clavatis. Campus appendicularis 3^{am} partem longitudinis alæ efficiens, parabolicus, paulo longior quam latior, margine basali obtusissime angulato. Coxæ basi infuscatæ. Lamina supra-analis transversa; cerci testacei.

♂. Minor et gracilior; elytris minus reticulatis; alis minus infuscatis, campo appendiculari minore, minus longiore quam latiore.

Long. cum elytr. ♀ 5·8, ♂ 4·8; elytr. ♀ 4·6, ♂ 3·5; pronot. 2, latit. pronot. 2·4 millim.

Hab. Mexico, States of Vera Cruz and Tabasco (*H. H. Smith*).

This species is closely allied to *A. fallax*; but in *A. fallax* the elytra are a little more rounded at the tip, reticulated only at the end, and the appendicular field (♀) of the wings is much shorter, not so long as broad, while the contrary is the case in *A. decipiens* (♀). Nevertheless, *A. decipiens* and *A. fallax* may belong to the same species. Also very similar to *A. lateralis* (Burm.), Brunner, of South America; but the appendicular field of the wing is much wider and more rounded in *A. decipiens*.

17. **Anaplecta elliptica,** sp. n. (Tab. III. fig. 2; Tab. IV. fig. 8.)

♀. Statura *A. aztecæ* et illi simillima. Fusco-castanea. Caput rufescens. Antennæ fuscæ. Pronotum transverse ellipticum, antice haud attenuatum, margine anteriore late truncato; margines laterales valde arcuati, late testaceo-diaphani. Meso- et metanotum testacea. Elytra abdomen paulum superantia, margine laterali toto testaceo-diaphano. Campus marginalis apicem versus latior, *venis 2 mediastinis ultra*

medium marginem attingentibus; *venis costalibus tantum* 4; areæ inter illas latæ, venis spuriis irregularibus divisæ ac reticulatæ. Campus discoidalis venis longitudinalibus obsolete elevato-reticulatus; vena media tantum furcata, a vena ulnari remota. Apex acuminatus, margine suturali recto, costali valde arcuato. Alæ infuscatæ, venis fuscis, campo marginali, area discoidali apice et campo appendiculari fuscis. Venæ costales tantum 4, sulcatæ (vel duplices), apice haud clavatæ. Area medio-discoidalis lata, sensim indivisa, ante apicem venulam obliquam arcuatam transversam breviter biramosam obferens. Campus appendicularis sat grandis, parabolicus, $\frac{2}{3}$ longitudinem reliquæ alæ æquans, margine basali subrecto. Pedes testacei. Abdomen saltem apice infuscatum; subtus apice rufo-castaneum. Cerci testacei. Ultimum segmentum ventrale amplum, apice anguste compressum.

♀. Long. cum elytr. 7·25; elytr. 5·6, pronot. 1·75, latit. pronot. 2·8 millim.

Hab. GUATEMALA (*coll. Dohrn*).

This species is easily recognizable by the elliptical form of its pronotum, the form of the apex of the elytra, and the venulation of their costal field. The elytra are reticulated as in *A. decipiens*.

18. **Anaplecta dohrniana,** sp. n. (Tab. III. fig. 3; Tab. IV. fig. 15.)

Statura *A. mexicanæ*, subgracilis, fusco-castanea. Antennæ testaceæ, 3ª parte basali fusca. Caput rufum vel aurantium, vertice transverso, prominulo; oculis invicem valde remotis, supra valde convergentibus. Pronotum sat ellipticum, anterius attenuatum, margine anteriore subarcuato subreflexo, posteriore transverso, vix angulato, marginibus lateralibus subreflexis, pellucidis. Elytra abdomen superantia, sat angusta, apice rotundata, area marginali basali pellucida; venæ costales apice leviter incrassatæ; venæ longitudinales subtiles; vena media apice biramosa; vena ulnaris ramulos 3 ad marginem suturalem emittens. Alæ nigrescentes; campo marginali nigro, margine aurantio, venis costalibus apice clavatis; area medio-discoidali quadrato-reticulata. Campus appendicularis minutus, rotundatus, margine basali angulato; campus posticus amplus. Pedes rufo-testacei, femora potius pilosa quam spinosa. Abdomen fuscum, subtus rufescens. Cerci apice fusci. Lamina supra-analis ♀ trigonalis, sulcata, apice anguste incisa, bilobata. ♂ ♀.

Long. 8·5; elytr. 7·75, pronot. 2, latit. pronot. 2·8 millim.

Hab. GUATEMALA (*coll. Dohrn*).

A peculiar species on account of its prominent vertex and very distant eyes. In the venulation of its elytra (discoidal campus) it forms a transition towards the 2nd section.

Sectio II.

Crassiusculæ. Elytrorum vena media ramulos obliquos ad marginem suturalem emittens.

19. **Anaplecta fulgida,** Sauss. (Tab. IV. fig. 16.)

Anaplecta fulgida, Sauss. Mém. du Mex., Blatt. p. 50. 1; Miss. Scient. Mex., Orthopt. p. 19. 6, t. 1. fig. 12.

Alæ leviter infuscatæ. Venæ costales 6–8 apice ovato-clavatæ. Area medio-discoidalis tota quadrato-reticulata. Campus appendicularis æque latus ac longus, basi vix angulatus, margine anteriore ante illum et margine apicali campi postici aurantiis.

♀. Lamina supra-analis trigonalis, apice anguste incisa; ultimum segmentum ventrale apice compressum, carinatum. ♂. Lamina supra-analis late trigonalis.

Alæ ut in figura *A. jansoni*. (Tab. IV. fig. 9.)

Varietas. Pronoti discus fuscus vel flavescens.

Long. ♀ 6·2, ♂ 7; elytr. ♀ 5·8, ♂ 6·5; pronot. ♀ ♂ 2, latit. pronot. 2·8 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*: ♂ ♀); GUATEMALA, Capetillo (*Champion*).

Very close to *A. jansoni*, but testaceous in colour; the pronotum with white transparent lateral margins, including the posterior angles. The venulation of the elytra and wings the same as in *A. jansoni* (comp. Tab. IV. fig. 9), but the wings less infuscated; the elytra rather transparent, having their costal veins more distinctly incrassated at the ends. The legs testaceous.

20. **Anaplecta jansoni,** sp. n. (Tab. III. fig. 4; Tab. IV. fig. 9.)

Crassiuscula, fusco-castanea. Antennæ et vertex inter oculos testacei. Pronotum majusculum; ejus margines laterales deflexi sordide testaceo-hyalini, postice infuscati. Elytra latiuscula, opaca; campo marginali latissimo, venis costalibus regularibus, parallelis 12 sat transversis. Vena media subtilis, venæ discoidali parallela, ramos 4–5 obliquos sat longitudinales emittens; vena ulnaris brevis, illis parallela. Alæ subhyalinæ, venis fusco-testaceis, campo marginali fulvescente, margine costali flavicante, venis costalibus 8 apice leviter nodosis; area medio-discoidali parum lata, tota per venulas transversas quadrato-reticulata. Campus apicalis parabolicus, fulvescens, parum opacus, dimidiam longitudinem reliquæ alæ æquans vel paulo longior. Pedes fusci, spinis et tarsis testaceis. Abdomen fuscum; lamina supra-analis (verisimiliter trigonalis). Tarsi 4-articulati.

Long. cum. elytr. 8·25; elytr. 6·25, pronot. 2, latit. pronot. 2·6 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Resembling *A. fulgida* in form and venulation, but differs in its brown coloration, the lateral margins of the pronotum being less translucid, brown posteriorly, and its elytra entirely brown, opaque.

Sectio III.

Venulæ costales elytri baseos elongatæ, arcuato-flabellatæ. Venæ campi discoidalis graciles, longitudinales vel irregulares.

21. **Anaplecta flabellata,** sp. n. (Tab. III. fig. 1; Tab. IV. figg. 13, 14.)

A. toltecæ statura et illi simillima, fusca. Vertex et pronotum fusco-castanea, hoc marginibus deflexis, pellucidis. Elytra subtestacea, apice acuminato-rotundata, abdominis longitudine, quam latiora ter longiora, campo marginali latissimo, campo discoidali venis longitudinalibus 4–6, sat obliquis in margine suturali desinentibus. Margo costalis basi pellucidus; campus analis et fascia transversa media disci fusci, venis inter fasciam fuscam et campum analem fuscis. Alæ subhyalinæ, venis fuscis, campo marginali dimidia parte apicali flavo; area medio-discoidali quadrato-reticulata. Campus apicalis infuscatus, apice angustatus, rotundatus, æque longus ac latus. Pedes testacei.

Var. Pallidior. Caput rufescens vel aurantiacum. Pronoti discus rufescens vel flavidus. Elytra vix fusco-varia, campo anali haud infuscato, vena anali plus minus infuscata; vitta transversa fusca disci plus minus evanida, abbreviata vel ad maculam reducta vel tota evanida. Alæ parum infuscatæ, campo apicali pallido, fulvescente. Lamina supra-analis ♂ rotundata, ♀ transversa, margine arcuato.

Long. 6; elytr. 4·5, pronot. 2, latit. pronot. 2·3 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*: var.); GUATEMALA, Chacoj in Vera Paz (*Champion*: var.); PANAMA, Bugaba (*Champion*).

Differs from *A. tolteca* in the brown fascia of the elytra and in the neuration of its wings, the end of the area medio-discoidalis not being parted by longitudinal veins. The appendicular field is slightly longer than in the male of *A. tolteca*.

Species incerta.

[**Anaplecta lateralis**, Burm.

Anaplecta lateralis, Burm. Handb. ii. p. 494; Brunn. de W. Syst. Blatt. p. 65. 5, fig. 2 (♀).

Alæ sordide hyalinæ, macula fusca ad marginem anteriorem; campo apicali *elongato-trigonali*, subopaco, ♀ triente parte longitudinis alæ æquali, apice subacuminato. (Comp. figuram laudatam.) *A. fallaci* (no. 9) pictura simillima.

Hab. COLOMBIA.]

Tribus BLATTINÆ.

Phyllodromidæ, Brunner de W. Syst. Blatt. p. 74.
Blattites, Saussure, Miss. Scient. Mex., Orthopt. p. 20.

The species of this Tribe present two different types in the armature of their anterior femora. The anterior inferior edge of these femora always bears two long apical spines; but the edge itself is armed as follows:—

Type 1 (Tab. VI. fig. 17). The basal half with 3–6 long spines distant from each other, and the apical part with numerous very small setiform spinulæ (type *Platamodes*, Scudd., Stål).

Type 2. The entire edge armed with distinct spines, which are smaller in the apical half than the basal spines, and decrease in length towards the end.

Scudder has proposed the genus *Platamodes* for a species of *Ischnoptera* belonging to the first type; and Stål has divided nearly the whole Tribe into two genera based upon the two types here indicated. This system of classification cannot, however, be maintained, the two types reappearing in most of the natural genera; so that if it was adopted we should have to make twice as many genera.

Stål has also proposed a genus *Liosilpha* to receive the species of the second type which have the supra-anal plate (♀) a little emarginated (comp. Tab. IV. fig. 21); but this character is also found in a number of species of the first type, so that if we follow him we should have to still further subdivide the genera. Neither Scudder nor Stål would have taken the above-mentioned characters as generic if they had examined a greater number of species. Thus, we have preserved the excellent classification given by Brunner de Wattenwyl in his 'Système des Blattaires,' to the exclusion of the divisions proposed by Stål, utilizing the characters of the two types only to form sections of the genera.

Synopsis generum.

1. Elytra perfecte explicata.
   2. Elytra membranacea vel parum coriacea, in utroque sexu perfecte explicata, rare in feminis abbreviata.
      3. Antennæ incrassatæ, piloso-plumosæ.
         4. Pronotum posterius arcuato-productum vel subangulatum; venæ ulnares elytrorum pone campum analem fractæ, omnes indivisæ.—THYRSOCERA, Burm.

44. Pronotum posterius transversum, vix arcuatum. Venæ campi discoidalis elytri haud fractæ, plus minus furcatæ.—CALOBLATTA, gen. n.

33. Antennæ setaceæ.

4. Alarum vena ulnaris venas completas ad marginem apicalem, ramosque incompletos ad venam dividentem emittens. Lamina infra-genitalis ♂ stylis longis munita.

5. Antennæ crassæ. Caput prominulum. Pronotum deplanatum, parabolicum, postice truncatum, subarcuatum. Mares stylo unico (?) instructi. Cerci mediocres.—[PSEUDISCHNOPTERA, Sss.]

55. Antennæ graciles. Vertex modice (rare magis) prominulum. Pronotum utrinque deflexum, postice productum vel arcuatum. Cerci longi; mares stylis 2 instructi. Elytra ♀ nonnunquam abbreviata.—ISCHNOPTERA, Burm.

44. Alarum vena ulnaris ramos incompletos nullos ad venam dividentem emittens.

5. Caput parum prominulum.—BLATTA, L.

55. Caput late prominulum.—PSEUDOPHYLLODROMIA, Burm.

22. Elytra cornea; alæ ut in generi *Blatta*.

3. Tarsi normales, aroliis instructi.—CERATINOPTERA, Br.

33. Tarsi aroliis destituti.—PARACERATINOPTERA, Sss.

11. Elytra in utroque sexu abbreviata, abdomen partim liberantia, cornea.

2. Elytra parum abbreviata. Lamina supra-analis ♂ maxima, difformis, in duas partes dissimiles profunde divisa.—ANISOPYGIA, gen. n.

22. Elytra truncata vel valde abbreviata, abdomen magna parte liberantia vel rudimentalia. Lamina supra-analis normalis, breviuscula.

3. Elytra articulata; alæ minimæ.—TEMNOPTERYX, Br.

33. Elytra squamiformia, lateralia, haud articulata. Alæ nullæ.

4. Tarsi aroliis instructi, normales.—LOBOPTERA, Br.

44. Tarsi aroliis nullis vel minimis, compressis, instructi.—PARALOBOPTERA, Sss.

THYRSOCERA, Burm.

Thyrsocera, Burm., Sauss., Brunn. de W.
Pseudomops, Serville.

This genus is properly American, the species of the eastern hemisphere being rather different in their characters. The American species have the wings destitute of an apical intercalated membranaceous field, and with the ulnar vein bearing 2–3 longitudinal branches*. *Thyrsocera* is strongly represented in Central America.

* The two types are distinguished as follows:—

a. Antennæ semper plumosæ. Alæ apice area membranacea intercalata nulla; campo anteriore venis rectis, vena ulnari ramosa.—*Thyrsocera*, Burm.

b. Antennæ crasse setaceæ, tunc plumosæ, tunc glabro-pilosellæ. Alæ apice area membranacea intercalata; campo interiore apice attenuato, vena ulnari arcuata, indivisa vel furcata. (Species orientales.)—*Hemithyrsocera*, Sss. (*Th. nigra*, *communis*, *major*, Br.).

1. **Thyrsocera cincta,** Burm.

Thyrsocera cincta, Burm. Handb. ii. p. 499. 3 (1839); Brunn. de W. Syst. Blatt. p. 122. 9; Sauss. Mém. Mex., Blatt. p. 125. 62; Miss. Scient. Mex., Orthopt. p. 50. 6, t. 1. fig. 28.
Thyrsocera mexicana, Sauss. Rev. et Mag. Zool. 1862, p. 168; Mém. Mex., Blatt. p. 122. 57.
Thyrsocera sallei, Sauss. l. c. p. 168; l. c. p. 123. 59 (var.).

Hab. MEXICO, Cordova, Tuxtla, Alvarado (*Saussure*), Atoyac in Vera Cruz (*Schumann*); GUATEMALA, Capetillo (*Champion*); NICARAGUA.

2. **Thyrsocera laticornis,** Perty.

Pseudomops laticornis, Perty, Delect. p. 117, t. 24. fig. 4 (1831); Serv. Orthopt. p. 116.
Thyrsocera laticornis, Burm. Handb. ii. p. 499. 6; Brunn. de W. Syst. Blatt. p. 123. 11; Sauss. Miss. Scient. Mex., Orthopt. p. 51. 7.
Thyrsocera dubia, Sauss. Mém. Mex., Blatt. p. 123. 58 (var.).

Hab. MEXICO, State of Jalisco (*Schumann*), State of Guerrero (*H. H. Smith*), Vera Cruz (*Saussure*).—BRAZIL.

3. **Thyrsocera oblongata,** Linn.

Blatta oblongata, Linn. et auct.
Thyrsocera oblongata, Burm. Handb. ii. p. 499. 8; Brunn. de W. Syst. Blatt. p. 121. 8; Sauss. Miss. Scient. Mex., Orthopt. p. 50. 5, t. 1. fig. 29.
Thyrsocera tolteca, Sauss. Mém. Mex., Blatt. p. 124. 61, fig. 21.
Blatta intercepta, Burm. Handb. ii. p. 497. 10; Sauss. Mém. Mex., Blatt. p. 113. 51.

Var. Pronotum rufum, vitta transversa præmarginali nigra, margine postico albido. Alæ apice infuscatæ, campo marginali magna parte fusco, venis omnibus fuscis.

Hab. MEXICO, Soledad in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Eastern Cordillera (*Saussure*); GUATEMALA, Zapote, San Gerónimo (*Champion*). —BRITISH HONDURAS (*Blancaneaux*).

4. **Thyrsocera discicollis,** Burm.

Blatta discicollis, Burm. Handb. ii. p. 498. 14, ♂; Sauss. Mém. Mex., Blatt. p. 114. 52.
Thyrsocera discicollis, Brunn. de W. Syst. Blatt. p. 123. 10; Sauss. Miss. Scient. Mex., Orthopt. p. 51. 8.

Hab. MEXICO, State of Guerrero (*H. H. Smith*), Eastern Cordillera, Orizaba, Moyoapan (*Saussure*).

5. **Thyrsocera gueriniana,** Sauss.

Thyrsocera gueriniana, Sauss. Revue et Mag. Zool. 1862, p. 168; Mém. Mex., Blatt. p. 124. 60; Miss. Scient. Mex., Orthopt. p. 50. 4.

Hab. MEXICO.

6. **Thyrsocera aurantiaca,** sp. n. (Tab. III. figg. 6, 7.)

♂. Inter minores notanda, aurantiaca. Caput, palpi et antennæ nigra; his ultra medium annulo aurantiaco. Elytra campo marginali apice fusco; margine apicali et suturali apice grisescente. Alæ griseo-flavido-hyalinæ, splendide nitentes: costa media aurantiaca, venis costalibus ultimis fuscis; omnibus longe

incrassatis; limbo apicali et postico anguste griseo. Pedes flavidi, coxis basi, femoribus apice, tibiis et tarsis nigris vel piceis; spinis omnibus flavis. Abdomen et cerci aurantiaca.

♂. Long. 8·5; elytr. 10, pronot. 3, latit. pronot. 3·25 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 feet (*Champion*).

[7. **Thyrsocera crinicornis,** Burm.

Thyrsocera crinicornis, Burm. Handb. ii. p. 499. 2; Saussure, Rev. et Mag. Zool. 1859, p. 111. 9; Miss. Scient. Mex., Orthopt. p. 48. 2.

♀. Nigra, gracilis. Antennæ nigræ, ultra pennicillum articulis 6°–8ᵐ aurantiis. Pronotum circumcirca albido-limbatum necnon utrinque linea vel macula triangulari albida, cum margine confusa. Elytrorum area mediastina, limbo coxarum, segmentorumque ventralium albidis. Alæ venis fuscis; campo marginali magna parte nigro; apice et limbo suturali infuscatis. Cerci elongati, deplanati, apice rotundati.

Var. *a.* Pronotum anterius haud albo-marginatum vel tantum puncto vel lineola albida.—*b.* Pronotum totum nigrum, tantum margine posteriore albido. (Guiana.)

Long. 9·5; elytr. 9·6, pronot. 3·6, latit. pronot. 3·6 millim.

Hab. GUIANA, Cayenne; BRAZIL.

This species has not hitherto been sufficiently well described. It may possibly occur in Central America.]

CALOBLATTA *, Sauss.

Caloblatta, Saussure, Societas Entomologica, 1893, p. 57.

Antennæ setaceæ, dimidia parte basali incrassatæ, pilosæ fere ut in genere *Thyrsocera*. Caput orbiculare, leviter prominulum, maculis ocellaribus flavis; vertex subplanatus, rugatus, cum facie angulum obtusum efficiens, utrinque intra ocellos acute marginatus; facies nitida, subcompressa, subcarinata.

Pronotum rotundatum, subvelutinum, paulo latius quam longius, lateribus arcuatis, parum deflexis, marginatis. Margo anterior sat late transversus, vix arcuatus; margo posterior latus vix arcuatus, in medio levissime productus. Discus impressionibus consuetis notatus, per sulcum obsoletum divisus, vel fere bicarinulatus.

Elytra subvelutina, saltem haud nitida, elongata, subparallela, margine costali haud sinuato, apice rotundato. Campus marginalis modice latus, venulis costalibus simplicibus, longis, valde obliquis. Venæ campi discoidalis omnes longitudinales plus minus furcatæ. Campus analis piriformis, venis principalibus 8–10.

Alæ campo anteriore angusto, posteriore parum reticulato. Vena ulnaris tantum apice ramosa, ac ramos paucos brevissimos ad venam dividentem emittens. Vena media basi retro-inflexa, area medio-discoidali dilatata.

Pedes graciles, compressi, ut in genere *Thyrsocera* spinosi. Femora sat gracilia; anteriora ut in typo *Platamode* armata, margineque posteriore inermi, spinulis dimidiæ partis apicalis marginis anterioris numerosissimis. Femora reliqua inermia, tarsi graciles, elongati; metatarsi postici elongati, pilosi, posticus plus quam dimidiam partem tarsi efficiens. Arolia inter ungues minuta.

Abdomen marginibus apice serratis, subtus lobatis; lamina supra-analis ♀ trapezina, ♂ transversa, margine posteriore arcuato. Cerci depressi, longiusculi.

Insecta minuta, gracilia, amœne picta, alis coloratis, generi *Thyrsocerœ* haud dissimilia at corpore angustiore.

1. **Caloblatta bicolor,** Sauss.

♀. Testacea. Antennæ nigræ, articulis 1°–2° piceis, 3°–6ᵐ testaceis, ante medium annulo longo (articulis 12) albido (pars apicalis deficiens). Pronotum aurantium; macula disci elongato-trapezina, rufa, postice ante marginem truncata, antice bisinuata et in medio angulato-divisa. Elytra fusco-liliacea, margine costali latiuscule flavido-limbato ac vitta longitudinali marginis suturalis elytri sinistri flavida, hac ultra medium intramarginali. Alæ diaphano-fuscæ; margine costali ultra medium flavido-albido; vena ulnari

* καλὸs; *Blatta.*

apice biramosa, necnon ramulis incompletis 3 instructa. Pedes testacei, genubus, tibiis et tarsis brunneis. Abdomen supra brunneum, subtus testaceum, late luteo-marginatum.

♀. Long. 10; elytr. 9·8, pronot. 3, latit. pronot. 3·4 millim.

Hab. COSTA RICA (*Rogers*).

3. **Caloblatta tricolor,** Sauss. (Tab. III. figg. 11–13.)

♂. Gracilis, niger. Antennæ nigræ, nigro-pilosæ, ultra medium annulo albido vel flavido (articulis circiter 8). Os piceum. Pronotum tricolor, lateribus et margine anteriore aurantiis, disco pictura rubra vel rufa in forma litteris **V**, marginem anticum utrinque attingente, necnon vitta longitudinali nigra, postice dilatata, nonnunquam marginem posteriorem attingente. Margines laterales frequenter latiuscule pellucentes, subvitrei, saltem ad angulum posteriorem. Elytra nigra vel fusco-liliacea, margine costali angustissime albido vel flavido. Alæ diaphano-fuscæ, apice et campo marginali fuscis; vena ulnaris furcata et ramum unicum brevissimum ad venam dividentem emittens; area ulnaris insuper venulis transversis paucis. Pedes basi testacei, genubus, tibiis et tarsis fuscis, spinis luteis, coxis apice et femoribus basi fusco-maculatis. Abdomen nigrum, segmentis ventralibus ultimis macula flava. Cerci nigri, cinereo-pilosi.

Var.—A. Elytra vix vel haud luteo-marginata.—B. Pronotum: *a*, vitta nigra longitudinali in margine postico transverse dilatata, ad marginem anticum perducta, macula rufa disci anterius utrinque ad marginem lateralem extensa, margine anteriore maculis 2 flavis, angulis posticis late flavis vel pellucidis; *b*, flavum, macula trapezina rufa per fasciam nigram divisa, marginem anteriorem tegente; hæc in medio maculis 2 flavis.

Long. 10; elytr. 10, pronot. 2·8, latit. pronot. 3 millim.

Hab. GUATEMALA, Senahu in Vera Paz (*Champion*); NICARAGUA, Chontales (*Belt, Janson*).

The markings of the pronotum are variable, the three colours being more or less extended one over the other. In a general way, the pronotum may be described as yellow, with a large trapezoidal reddish picture on the disc, this being divided by a black band, which is more or less extended anteriorly and more or less dilated posteriorly, so as to cover sometimes the greatest part of the hind margin.

[PSEUDISCHNOPTERA, Sauss.

Pseudischnoptera, Saussure, Miss. Scient. Mex., Orthopt. p. 66 (1870).

1. **Pseudischnoptera lineata,** Oliv.

Blatta lineata, Oliv. Encycl. iv. p. 317. 17; Palis. Beauv. Ins. d'Amér. p. 228, Orth. t. 2 *c.* fig. 5; Serville, Orthopt. p. 98. 22.

Ischnoptera lineata, Sauss. Mém. Mex., Blatt. p. 80.

Thyrsocera lineata, Brunn. de W. Syst. Blatt. p. 126. 20.

Pseudischnoptera lineata, Sauss. Miss. Scient. Mex., Orthopt. p. 67. 1 (♂).

Hab. SOUTH AMERICA, Cayenne; ANTILLES.

This species may eventually be found to occur in Central America.]

ISCHNOPTERA, Burm.

Ischnoptera, Burmeister, Brunner de W., Saussure.

Platamodes, Scudder, Bost. Journ. of Nat. Hist. vii. p. 417 (1862); Stål (ex parte).

Antennæ setaceæ. Elytra et alæ abdomen superantia (rare in feminis abbreviata), membranacea. Alarum vena ulnaris ramos ad marginem apicalem, alterosque incompletos ad venam dividentem emittens.

Synopsis specierum.

Femora anteriora subtus in margine interno (anteriore) parte proximali spinis 3–6 armata, parte distali spinulis minimis piliformibus numerosis instructa, necnon ante spinas apicales 2 spina majore prædita. (Species Americanæ.)—PLATAMODES *, Scudd.

A. Uterque sexus cognitus, saltem feminæ.

a. Elytra in feminis abbreviata, in maribus completa.

b. Majuscula, fusca, pronotum utrinque luteo-marginatum.—1. *inæqualis*, sp. n.

bb. Minor, fulvo-testacea.— [2. *uhleriana*, Sss.]

aa. Elytra in utroque sexu abdomen superantia.

b. Antennæ unicolores.

c. Majores.

d. Fusca, alis infuscatis, pronoto utrinque luteo-pellucido limbato.—3. *mexicana*, Sss.

dd. Pronoto toto corneo, haud pellucente limbato. Color fuscus vel fulvescens.

e. Lamina supra-analis haud truncata.

f. Lamina supra-analis in medio producta.—4. *consobrina*, Sss.

ff. Fulva; lamina supra-analis ♀ tota latitudine rotundata.—5. *conformis*, sp. n.

ee. Lamina supra-analis truncata.—6. *ignobilis*, Sss.

cc. Minores.

d. Media, crassiuscula; pronotum ellipticum, margine postico arcuato, disco ♀ sulcis nullis, ♂ obsoletis. Color pallide testaceus.—7. *nahua*, Sss.

dd. Minutæ, graciliores, castaneæ; pronotum postice parum arcuatum, impressionibus 2 distinctis. Alæ frequenter infuscatæ.

e. Pronotum totum castaneum.

f. Lamina supra-analis producta, truncata.—8. *inca*, sp. n.

ff. Lamina supra-analis trigonalis.—9. *castanea*, Sss.

ee. Pronotum utrinque marginibus pallidis:

f. vittis marginalibus arcuatis flavis.

g. Media. Pronotum disco fusco, circumcirca luteo-marginato.—10. *azteca*, Sss.

gg. Minor. Pronotum utrinque flavo-limbatum, vitta flava anterius completa vel interrupta.—11. *tolteca*, Sss.

ff. marginibus luteis antice et lateraliter ubique æquilatis.

g. Testaceo-pellucidis (lamina supra-anali ♂ minus producta, late trigonali).—12. *nana*, sp. n.

gg. Testaceo-opacis (lamina supra-anali ♂ angusta, longe producta, apice fere semicirculariter excisa).—13. *parvula*, Sss.

bb. Antennæ annulo albido.—14. *annulicornis*, sp. n.

AA. Feminæ ignotæ.

a. Major, brunnea vel rufescens. Pronotum valde ellipticum, disco fusco, circumcirca luteo-limbato (*inæquali* affinissima).—15. *couloniana*, Sss.

aa. Minores.

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* Stål has extended this subgenus to include several other genera (comp. p. 30); the name is twice preoccupied in Insecta.

b. Testacea; pronoti discus fuscus, circumcirca testaceo-marginatus, per vittam flavidam divisus.—16. *divisa*, sp. n.

bb. Rufo-testacea; pronotum corneum, disco fasciis 2 arcuatis fuscis.—[17. *bolliana*, sp. n.]

11. Femora anteriora margine infero-interno tota longitudine spinoso, spinis partis distalis minoribus, confertis, distinctissimis. (Species mundi antiqui.)—(ISCHNOPTERA.)—18. *blattoides*, Sss. (Cf. *I. ectobioides*, Sss.; *I. bocagei*, Bol.; *I. vitticollis*, Br., &c.)

Conspectus specierum secundum alam ordinatarum.

a. Alarum area medio-discoidalis areæ medio-ulnari æquilata.—1. *inæqualis*; [2. *uhleriana*]; 6. *ignobilis*; 7. *nahua*; (8. *inca*); 13. *parvula*; 16. *divisa*; 18. *blattoides*.

aa. Alarum area medio-discoidalis quam area medio-ulnaris evidenter latior.—3. *mexicana*; 4. *consobrina*; 5. *conformis*; 8. *inca*; 9. *castanea*; 10. *azteca*; 11. *tolteca*; 12. *nana*; 14. *annulicornis*; 15. *couloniana*; [17. *bolliana*].

1. **Ischnoptera inæqualis,** sp. n. (Tab. VI. figg. 14–17.)

♂. Fusca vel fusco-ferruginea, antennis brunneis. Caput facie testacea, in medio et vertice nigris. Pronotum ellipticum, impressionibus distinctis, disco convexiusculo, lævigato, toto nigro vel fusco vel castaneo, marginibus lateralibus testaceis, translucidis, fere sulfureis. Elytra fusca vel rufescentia, area basali marginis antici hyalina. Alæ subvitreæ, margine anteriore et apicali latiuscule infuscato. Vena ulnaris 6–7-ramosa; præterea ramo incompleto, alterisque rudimentariis, venam dividentem haud attingentibus.

♀. Pronotum corneum, parabolicum, margine anteriore et laterali semi-elliptico, posteriore transverso, lato, subangulato, angulis lateralibus leviter rotundatis. Discus convexiusculus, impressionibus nullis, fusco-niger, marginibus lateralibus flavidis. Elytra abbreviata, primum abdominis segmentum tegentia, fusco-nigra, venis distinctis, apice late rotundata, area costali flavida. Alæ rudimentariæ, flavicantes, segmentum mediale haud superantes, apice fuscæ vel maculosæ.

♀. Long. 16; pronot. 5, latit. pronot. 6·5, long. elytr. 8, latit. elytr. 5·25 millim.

♂. Long. 21; pronot. 5·2, latit. pronot. 6·3, long. elytr. 23, latit. elytr. 6·8 millim.

Hab. NORTH AMERICA, Texas.—NORTH MEXICO (*Mus. Genavense*).

This species differs from *I. couloniana* (♂) in its pronotum being more coriaceous and quite black, except its lateral margins.

[2. **Ischnoptera uhleriana,** Sauss. (Tab. III. figg. 21–23.)

Ischnoptera uhleriana, Sauss. Revue et Mag. Zool. xiv. p. 169 (1862); Mém. Mex., Blatt. p. 82. 23 (♂); Miss. Scient. Mex., Orthopt. p. 55. 2 (♂).

♂. Pallide testacea, fulva. Pronotum ellipticum, utrinque subdeflexum, circumcirca pallidius; impressionibus disci parum profundis, obsoletis. Elytra fulvescentia. Alæ subvitreæ, venis testaceis, venulis costalibus medii campi marginalis incrassatis, brunneis; vena ulnari ramis apicalibus 5–6, alterisque abbreviatis 2–3. Lamina supra-analis trigonalis. (Var. *fulvescens*.)

♀. Fuscescens, capite, pronoto, elytris pedibusque testaceis. Caput flavidum, facie media brunescente. Pronotum quam in ♂ minus ellipticum, subcorneum, impressionibus obliquis disci obsoletissimis; margine posteriore minus arcuato, disco rufo-brunneo. Elytra abbreviata ad 3^{m} abdominis segmentum extensa, fulvo-testacea, apice late rotundata, margine exteriore arcuato, apice fere regulariter rotundato, campo costali translucido, venis brunneis. Alæ breviores, primum abdominis segmentum tegentes. Abdomen superne et inferne fuscum; segmentis margine laterali et posteriore testaceo. Lamina supra-analis trigonalis. Cerci testacei, basi et subtus fusci.

♀. Long. 11·7; elytr. 6, latit. elytr. 3·6, pronot. 3·5, latit. pronot. 4·75 millim.

♂. Long. 17; elytr. 17·8, latit. elytr. 5·2, pronot. 4, latit. pronot. 5·3 millim.

Hab. NORTH AMERICA, Georgia, Texas, New Mexico.]

This species is closely allied to *I. brasiliensis*, Sss., from S. Brazil and the Argentine Republic, of which the male only is known. In this latter species the costal veins of the wing are not brown, the complete rami of the vena ulnaris are 3 or 4, and the incomplete rami also 3 or 4, and rather long.

3. **Ischnoptera mexicana,** Sauss.

Ischnoptera mexicana, Sauss. Mém. Mex., Blatt. p. 86. 27; Brunn. de W. Syst. Blatt. p. 141. 25; Sauss. Miss. Scient. Mex., Orthopt. p. 64. 15, t. 2. fig. 36.

Hab. MEXICO, Eastern Cordillera, Orizaba, Moyoapan.

4. **Ischnoptera consobrina,** Sauss. (Tab. III. fig. 24.)

Ischnoptera occidentalis, Sauss. Mém. Mex., Blatt. p. 87. 28 (♀); Brunn. de W. Syst. Blatt. p. 141. 23.

Ischnoptera consobrina, Sauss. Mém. Mex., Blatt. p. 88. 29; Brunn. de W. Syst. Blatt. p. 141. 24; Sauss. Miss. Scient. Mex., Orthopt. p. 59. 8, t. 2. fig. 34.

♀. Fusca. Caput fuscum, prominulum, maculis ocellaribus flavis. Oculi in vertice invicem parum distantes; spatium inter illos æque latum ac longum. Pronotum corneum, opacum, fusco-nigrum, modice ellipticum, margine posteriore vix arcuato; disci impressionibus distinctis. Elytra longiuscula, castanea vel rufescentia. Alæ subvitreæ, venis fuscis, campo marginali toto infuscato, in medio opaco; area medio-discoidali lata, areæ medio-ulnari fere duplo latiore. Vena ulnaris ramis apicalibus 4–5, incompletis 5–6 brevissimis. Pedes testacei vel leviter infuscati. Abdomen fusco-testaceum, apice fuscum vel subtus totum fuscum. Lamina supra-analis in medio producta, apice rotundata. Cerci fuscescentes.

Var. Pronotum utrinque et antice obscure rufo-marginatum.

Long. 17; pronot. 4·5, lat. pronot. 5·75, long. elytr. 20·5, latit. elytr. 5·5 millim.

Hab. NORTH AMERICA, Texas.—MEXICO, Guerrero (*H. H. Smith*), Jalisco and Vera Cruz (*Schumann*), Orizaba, Cordova (*Mus. Genavense*); GUATEMALA (*Mus. Genavense*); NICARAGUA, Chontales (*Janson*).

Seems to be very closely allied to *I. rufa*, Br. (from Brazil); but the wings have brown nerves, and the lamina supra-analis seems to have a different shape, not being exactly triangular.

5. **Ischnoptera conformis,** sp. n. (Tab. III. fig. 25.)

♀. *I. consobrinæ* formis simillima, fulvo-testacea; elytris paulo brevioribus. Pronotum illo *I. consobrinæ* conforme, totum corneum. Elytra fulva. Alæ vitreæ, venis fulvis, campo marginali fulvescente, in medio haud opaco; venulatione illæ *I. consobrinæ* conformi. Pedes pallide testacei. Abdomen apice castaneum; lamina supra-anali tota latitudine inter cercos rotundata.

Long. 17; pronot. 4·5, latit. pronot. 5·75, long. elytr. 17, latit. elytr. 4·8 millim.

Hab. NICARAGUA, Chontales (*Janson*).

6. **Ischnoptera ignobilis,** Sauss.

Ischnoptera ignobilis, Sauss. Miss. Scient. Mex., Orthopt. p. 60. 10*.

♀. Nigra vel castanea; elytris castaneis vel rufescentibus; pedibus frequenter pallidioribus, ferrugineis. *I. consobrinæ* simillima at paulo major; differt lamina supra-anali late trapezina, late truncata, oculis invicem potius magis remotis*. Alæ venis rufo-testaceis vel brunneis, apice et campo anteriore brunneo—

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* I was certainly mistaken when I wrote that the eyes were less distant than in *I. consobrina*. On the contrary, they are separated by a space rather broader than long, and the area vitrea of the wing is also rather broader than the area medio-ulnaris. (*Sauss.*)

vel rufescenti-nebulosis, area medio-discoidali quam area medio-ulnaris paulo latior, quadrato-reticulata vel areolis latioribus.

Var. *a*. Elytra ferruginescentia; alæ venis ferrugineis, margine anteriore ferrugineo; *b*. Tota rufescens.

Long. 18·5; elytr. 22, pronot. 5, lat. pronot. 6·5 millim.

Hab. GUATEMALA (*Rodriguez*).—ARGENTINE REPUBLIC (*Saussure*).

Closely resembling *I. consobrina*, but very distinct in the shape of its supra-anal lamina.

7. **Ischnoptera nahua**, Sauss.

Ischnoptera nahua, Sauss. Revue et Mag. Zool. 1868, p. 356. 10 (♂ ♀); Miss. Scient. Mex., Orthopt. p. 56. 6, t. 2. fig. 33.

Hab. MEXICO, Eastern Cordillera, Orizaba; GUATEMALA, San Gerónimo (*Champion*).

8. **Ischnoptera inca**, sp. n. (Tab. IV. fig. 23.)

♀. Sat minuta, castanea; caput modice prominulum, maculis 2 ocellaribus flavis. Antennæ castaneæ, dimidia parte apicali fulvo-testacea. Pronotum ellipticum, postice parum arcuatum, antice attenuatum, coriaceum, sulcis disci profunde impressis, lobis lateralibus deflexis, subsulcatis, nec testaceis, nec translucidis. Elytra sat longa, castanea. Alæ brunneo-infumatæ, venis fuscis; campo marginali in medio fusco-opaco. Vena ulnaris ramis apicalibus 2, minutisque transversis 6 completis. Area medio-discoidalis quam area medio-ulnaris fere duplo latior, quadrato-reticulata. Pedes pallide testacei. Abdomen castaneum, ultimo segmento ventrali magno. Lamina supra-analis apice haud producta, obtusangula, vel rotundato-producta.

♂. Lamina supra-analis grandis, apice latiuscule et longiuscule trigonali-producta, rotundata vel truncata. Cerci basi fusci, dehinc fulvi, apice fusco.

Var. Rufo-castanea; alis parum nebulosis, campo marginali et venis ferruginescentibus. Elytrorum area costalis basi lutea. Abdomen superne testaceum. (Peru.)

Long. 9·5; elytr. 10·2, pronot. 2·5, latit. pronot. 3 millim.

Hab. GUATEMALA, Senahu in Vera Paz (*Champion*).—PERU (var.).

Nearly allied to *I. parvula*, but differing in the colour of its antennæ and in that of the margin of the pronotum, which are testaceous in *I. parvula*. Also very closely allied to *I. castanea* and *I. nana*, but differs in the form of the lamina supra-analis, ♀. The male is characterized by its lamina supra-analis and infra-genitalis being both much produced in the middle.

9. **Ischnoptera castanea**, Sauss.

Ischnoptera castanea, Sauss. Rev. et Mag. Zool. 1869, p. 112. 14; Miss. Scient. Mex., Orthopt. p. 61. 11 (♀).

I. parvulæ paulo major, alis longioribus. Tota castanea, pedibus rufo-testaceis, pronoto haud flavo-limbato, plus minus bi-impresso. Elytra margine costali basi frequenter pallidiore. Alæ leviter infuscatæ, venis fusco-rufis. Venulæ costales longiuscule incrassatæ. Vena discoidalis et media venulæque transversæ testaceæ. Vena ulnaris ramos 3 ad apicem, ramulos minutos 3–4 ad venam dividentem emittens. Lamina supra-analis trigonalis, apice leviter rotundata, integra.

Long. 10; elytr. 10·5, pronot. 2·8, latit. pronot. 3·8 millim.

Hab. MEXICO.—BRAZIL.

10. **Ischnoptera azteca,** Sauss.

Ischnoptera azteca, Sauss. Rev. et Mag. Zool. 1862, p. 170; Mém. Mex., Blatt. p. 88. 30 (♂); Brunn. de W. Syst. Blatt. p. 141. 26; Sauss. Miss. Scient. Mex., Orthopt. p. 65. 17.

Blatta otomia, Sauss. Mém. Mex., Blatt. p. 104. 42, ♂ (nec ♀).

Hab. MEXICO, temperate regions.

11. **Ischnoptera tolteca,** Sauss.

Ischnoptera tolteca, Sauss. Rev. et Mag. Zool. 1868, p. 356. 9 (♂ ♀); Miss. Scient. Mex., Orthopt. p. 64. 16 (♀ ♂), t. 2. fig. 37.

Hab. MEXICO, temperate regions; GUATEMALA, Cerro Zunil (*Champion*).

12. **Ischnoptera nana,** sp. n.

♂. *I. incæ* simillima, at minor. Caput et pronotum rufo-castanea; hoc marginibus lateralibus testaceo-pellucidis, impressionibus discoidalibus obsoletis. Elytra rufo-castanea. Alæ hyalinæ, venis testaceis; venulæ costales longiuscule incrassatæ; vena ulnaris ramis apicalibus 2, incompletis 3–4. Pedes testacei; abdomen fusco-rufidum, supra basi testaceum. Lamina supra-analis trigonalis, apice rotundata; infra-genitalis stylis 2 normalibus.

♂. Long. 8; elytr. 8, pronot. 2·75, latit. pronot. 3 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Extremely close to *I. inca,* but the pronotum with transparent margins and with very slight impressions; the lamina supra-analis not so broadly produced, triangular, and not truncated.

13. **Ischnoptera parvula,** Sauss.

Ischnoptera parvula, Sauss. Rev. et Mag. Zool. 1869, p. 112. 13; Miss. Scient. Mex., Orthopt. p. 62. 12 (♀); Mélang. Orth. ii. fasc. iv. p. 102. 3 (♂ ♀).

♀. Minuta, castanea, subtus testacea. Caput castaneum. Pronotum castaneum, marginibus anteriore et lateralibus luteis; elytrorum margine costali pallescente. Alæ ♀ obtusæ, vitreæ, margine costali inquinato; vena ulnari ramis completis 2, incompletis minutis 3–4. Abdominis basis et pedes lutei. Lamina supra-analis ♀ sat longa, apice truncata, subrotundata. Cerci fusci.

♂. Lamina supra-analis longe producta, acutangula, apice hebetato, laminam infra-genitalem, superante; lamina infra-genitalis trapezina, truncata, angulis rotundatis, nonnunquam irregularis.

♀. Long. 8·8; elytr. 8·5, pronot. 2·5, latit. pronot. 3·25 millim.

♂. Long. 8·2; elytr. 8, pronot. 2, latit. pronot. 2·75 millim.

Hab. NICARAGUA, Chontales (*Janson*).—BRAZIL; CUBA (*Saussure*).

The Nicaraguan specimen here described is of a browner colour than those from Cuba, with the pronotum distinctly margined with yellow. The lamina supra-analis is also less produced, and rather more truncated and rounded at the tip. The males from Cuba have the lamina supra-analis very triangular, prominent, with the tip truncate-rounded; the lamina infra-genitalis rather short, rounded, irregular, with one stylus near the middle.

14. **Ischnoptera annulicornis,** sp. n.

♀. Statura media, nigro-castanea vel fuscescens. Caput nigrum; oculis invicem remotis. Antennæ nigræ, pilosellæ, in medio vel ultra medium annulo albido (art. 6). Pronotum nigrum, bi-impressum, margine postico transverso, subangulato. Elytra parum elongata, tamen cercos superantia, castanea vel rufo-castanea, margine costali obsolete flavicante. Alæ nebulosæ, venis ferrugineis; campo marginali ferruginescente, venulis costalibus crassis, ultimis apice incrassatis. Area medio-discoidalis quam area medio-ulnaris latiore. Vena ulnaris ramos apicales 3, incompletos 4–5 emittens. Campus posterior venis spuriis et transversis hyalinis. Coxæ partim testaceæ. Abdomen basi fusco-testaceum. Lamina supra-analis trigonalis, producta, apice rotundata, ultimum segmentum ventrale superans.

Long. 13; pronot. 3, latit. pronot. 4; long. elytr. 12·5, latit. elytr. 4 millim.

Hab. GUATEMALA (*coll. Dohrn*).

15. **Ischnoptera couloniana,** Sauss.

Ischnoptera couloniana, Sauss. Rev. et Mag. Zool. 1862, p. 169; Mém. Mex., Blatt. p. 83. 24 (♂); Miss. Scient. Mex., Orthopt. p. 63. 13 *.

Majuscula, fusco-testacea. Pronotum ellipticum, valde bi-impressum, disco medio inter sulcos inæquali, fusco, marginibus circumcirca testaceis. Elytra et alæ elongata, fusco-ferrugineo-inquinata. Alarum vena ulnaris ramulis basalibus incompletis 3–4.

Var. Elytris et alis testaceis.

Long. 21; pronot. 4·5, latit. pronot. 6·5; long. elytr. 23·25, latit. elytr. 6·5 millim.

Hab. NORTH AMERICA, Texas.—MEXICO.

Nearly allied to *I. pennsylvanica* (De Geer); but that species has the disc of the pronotum more corneous, without small impressions. Most probably the female has abbreviated wings, as in *I. inæqualis* (No. 1).

16. **Ischnoptera divisa,** sp. n.

♂. Fusco-testacea. Caput infuscatum, vertice flavido. Pronotum ellipticum, sulcis perspicuis; disco castaneo, per vittam flavidam diviso; margine circumcirca pallide testaceo. Elytra hyalino-testacea, venis testaceis, vena humerali basi fusca. Alæ vitreæ, venis fusco-testaceis. Vena ulnaris ramis apicalibus 3, incompletis 1–2, instructa. Pedes pallide testacei. Abdomen infuscatum, margine laterali testaceo; lamina supra-anali rotundata.

♂. Long. 14·5; elytr. 14·5, latit. elytr. 4·25; pronot. 3·5, latit. pronot. 5 millim.

Hab. NORTH AMERICA, Georgia (*Mus. Genavense*).—NORTH MEXICO.

[17. **Ischnoptera bolliana,** sp. n.

♂. Sat minuta, fulva. Capite sat prominulo, castaneo. Pronotum ellipticum, castaneum vel fulvum, lateribus testaceo-pellucidis; sulcis disci perspicuis. Elytra fulvo-testacea, vel basi rufescentia, parum elongata. Alæ vitreæ, venis flavidis, venulis costalibus leviter incrassatis; campo marginali fulvescente. Vena ulnaris ramis apicalibus 2–3, incompletis 2–3. Pedes fulvi. Abdomen nonnunquam infuscatum. Lamina supra-analis rotundata. Cerci nonnunquam basi fusca.

Var. Pronoti discus castaneus per fasciam longitudinalem flavidam oboletam divisus.

Long. 12·2; elytr. 12·5, latit. elytr. 4; pronot. 3, latit. pronot. 3·8 millim.

Hab. NORTH AMERICA, New Mexico, Texas (*Mus. Genavense*).]

* This species has not been figured; the citation in its synonymy in the works &c. quoted, as also 'Mél. Orthopt.' i. fig. 21, should be suppressed, having been given by mistake.

18. **Ischnoptera blattoides,** Sauss.

Epilampra blattoides, Sauss. Mélang. Orthopt. i. 1er fasc. no. 16 (1863).

Blatta capitata, Sauss. Mém. Mex., Blatt. p. 114. 53, t. 1. fig. 19 (♂) (1864).

Ischnoptera capitata, Brunn. de W. Syst. Blatt. p. 140. 21; Sauss. Miss. Scient. Mex., Orthopt. p. 54. 1, t. 2. fig. 31 (♂) (1872).

Hab. Mexico.—Brazil; Cuba.—E. Indies &c.

This species we suppose to be of Asiatic origin, having been imported into America, where it is becoming widely spread.

BLATTA, Linn.

Blatta, auctt.

Phyllodromia, Serville, Orthopt. p. 105; Brunner de W. Syst. Blatt. p. 88.

Liosilpha * (partim), Stål, Recherches sur le système des Blattaires (Bihang till k. Sv. Vet.-Akad. Handl. ii. p. 10) (1874).

Synopsis specierum.

1. Alarum vena ulnaris indivisa vel furcata.—Blatta, L.
   Fulvo-testacea, pronoto nigro-bivittato.—1. *germanica,* L.
11. Alarum vena ulnaris ramosa.—Phyllodromia, Serv.
   a. Femora anteriora subtus et ad apicem dense spinulosa. Lamina supra-analis ♀ apice incisa. (*Liosilpha* †, Stål.) (*Cf.* Tab. IV. fig. 21.)
   b. Elytra ♀ ♂ membranacea, abdomen superantia. Species testaceæ.
      c. Magna, testacea. Venulæ costales alarum graciles.—2. *nahua,* sp. n.
      cc. Minores. Elytra ♀ abdomen vix superantia.
         d. Alarum venulæ costales clavatæ.
            e. Major. Venulæ costales alarum elongato-clavatæ, fuscæ.—3. *brunneriana,* Sss.
            ee. Minor. Venulæ costales breviter et crasse clavatæ.—4. *delicatula,* Guér.
         dd. Alarum venulæ costales incrassatæ, sed vix vel haud clavatæ.—5. *azteca,* sp. n.; 6. *alaris,* sp. n.
   bb. Elytra ♀ abdomen haud superantia plus minus coriacea, ♂ longiora.
      c. Pronotum vittis 2 latis nigris.—7. *totonaca,* Sss.
      cc. Pronotum testaceum, haud vittatum:
         d. disco fusco. Elytra umbrata, in medio fascia vel notula pallida.—[8. *supellectilium,* Serv.]
         dd. Tota testacea. Lamina supra-analis ♂ bilobata.—9. *fraterna,* sp. n.

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* This genus cannot be maintained. It is based only on the fact that the supra-anal plate is emarginate at the tip. This character is not generic; it is to be found also in the second section (*aa*) of *Blatta*, so that one would have to divide the genus *Blatta* into five genera if it was used. It is present also in *Ischnoptera* and in several other genera of Blattinæ.

† Established on *Blatta adspersicollis*, Stål, from Brazil.

aa. Femora anteriora subtus ut in typo *Platamode* (antèa, p. 30) armata.
b. Lamina supra-analis ♀ integra, late triangularis, acuta. (Elytra ♀ parum elongata.) (Species testaceæ.)
c. Lamina supra-analis sulco divisa.—10. *dilatata*, Sss.
cc. Lamina supra-analis indivisa.—11. *vitrea*, Br.
bb. Lamina supra-analis ♀ minute incisa. (Elytra ♀ abdominis longitudine.)
c. Sat minuta, castanea, testaceo-marginata.—12. *orizabæ*, Sss.
cc. Testaceæ, pronoti disco consperso vel flavido.
d. Minor, pallida; elytris abdomen parum superantibus.—13. *acolhua*, Sss.
dd. Majores.
e. Pronoti disco flavido; lamina supra-anali ♀ breviter fissa.—14. *maya*, sp. n.
ee. Pronoti disco fusco-marmorato.—15. *zapoteca*, Sss.
aaa. Incertæ sedis.
b. Lamina supra-analis ♂ obtusangula. (Femina ignota.)—16. *chichimeca*, Sss.
bb. Lamina supra-analis trigono-rotundata.—17. *mexicana*, Sss.

1. **Blatta germanica**, Linn.

Blatta germanica, Linn. Syst. Nat. 12th edit. i. 2, p. 688. 9, et auctt.
Phyllodromia germanica, Brunn. de W. Syst. Blatt. p. 90. 1, fig. 7.
Phyllodromia bivittata, Serville, Orthopt. p. 108. 37.
Blatta bivittata, Saussure, Mém. Mex., Blatt. p. 102. 41 (nec auctt.).

Femora anteriora subtus et ad apicem spinulosa. Lamina supra-analis ♂ grandis, plana, acute trigonalis, retro valde prominula.

Hab. Mexico; Central America. Species in toto orbi occurrens, verisimiliter ex Asia diffusa.

2. **Blatta nahua**, sp. n. (Tab. IV. figg. 19–21.)

Valida, tota pallide testacea, abdomine fusco-testaceo. Oculi invicem sat propinqui, a supero visi convergentes. Facies maculis fuscis 4 invicem valde remotis in lineam transversam dispositis, necnon inter antennas 2, frequenter obsoletis; frons supra antennas linea transversa fusca; vertex inter oculos vitta transversa fusca. Pronotum pellucidum, subellipticum, margine posteriore in medio subproducto. Discus totus flavidus, impressionibus parum profundis, punctis nonnullis fuscis regulariter ordinatis, quarum 2 majoribus in parte postica disci. Elytra grandia. Alæ subvitreæ, venis testaceis, leviter brunneis; venulis costalibus apice parum sed longe incrassatis; vena ulnaris 4–5-ramosa; vena axillaris 3-ramosa. Venulæ campi antici omnes transversæ, regulares; illæ areæ ulnaris inter ramos frequenter in medio interruptæ. Pedes ad apicem tibiarum et articulorum tarsorum, et ad exsertionem spinarum fusconotati vel punctati. Femora anteriora in margine externo spinis longis 4, basi inermia; in margine interno spinis longioribus 4–5 minoribusque 9–10. Abdomen supra fuscescens, subtus minus umbratum vel brunneo-irroratum, frequenter tota longitudine in medio fuscum; segmentis utrinque puncto fusco. Cerci elongati, articulis 5 ultimis elongatis, apice imo fusco.

♀. Lamina supra-analis late trigonalis, apice semicirculariter incisa, angulis distinctissimis. Ultimum segmentum ventrale ad apicem nigrum.

♂. Lamina supra-analis rotundata, subincisa, infragenitalem superans. Cerci ultra medium graciles, articulis 6 ultimis valde discretis, 4 submoniliformibus, 4 moniliformibus, 2 ultimis gracillimis, ultimo nigro. Lamina infra-genitalis transversa, inter stylos late transversa, vix arcuata; styli invicem valde remoti, ad cercos appositi.

Var. *minor*? Magis testacea; alis venis subfuscis. ♂.
♀. Long. 15; elytr. 17·5, latit. elytr. 5·75, pronot. 4·2, latit. pronot. 6 millim.
♂. Long. 15; elytr. 19, latit. elytr. 5·5, pronot. 4, latit. pronot. 6 millim.

Hab. MEXICO (*Sumichrast*), Atoyac in Vera Cruz (*Schumann*), Tabasco (*H. H. Smith*).

Comp. *Blatta chichimeca* (no. 16).

3. **Blatta brunneriana,** Sauss.

Blatta brunneriana, Sauss. Rev. et Mag. de Zool. 1868, p. 98. 7; Miss. Scient. Mex., Orthopt. p. 32. 8, t. 1. fig. 20 (1870).

Hab. MEXICO, Eastern Cordillera (*Sumichrast*).

4. **Blatta delicatula,** Guér.

Blatta delicatula, Guér. Ins. de Cuba (Ramon de la Sagra), p. 346; Sauss. Mém. Mex., Blatt. p. 104. 43, fig. 17; Miss. Scient. Mex., Orthopt. p. 33. 9.

Hab. MEXICO.—ANTILLES, Cuba.

5. **Blatta azteca,** sp. n.

♀. Testacea. Pronotum ellipticum, translucidum, disco ochraceo vel leviter brunneo-irrorato, vitta media pallidiore obsoletissima. Elytra abdomen superantia. Alæ subhyalinæ, venis campi antici et intermedii ferrugineis, campus anterior dimidia parte apicali vel apice ferruginescente; venis costalibus 6–7 primis apice longe leviter incrassatis; vena ulnari 4–5-ramosa, ramis partim furcatis. Campus intermedius ad venas ferruginescens. Campus radialis subvitreus, venis brunneis. Abdomen supra fuscescens. Lamina supra-analis distincte trigonali-incisa, ultimum segmentum ventrale prominulum, apice frequenter compressum.
Long. 11·8; elytr. 14, latit. elytr. 4, pronot. 3·25, latit. pronot. 4·8 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

This species is very closely allied to *B. brunneriana*. It has the pronotum somewhat larger and the wings not infuscated. In *B. brunneriana* the first nine of the venæ costales are much more thickened and clavated, being terminated by elongated brown thickenings. *B. azteca* also much resembles *B. alaris*; but the wings are not reticulated with brown colour, and the venæ costales are more thickened. The second branch of the vena mediastina forms three venæ costales, and the lamina infra-genitalis is much produced beyond the last ventral segment.

6. **Blatta alaris,** sp. n.

♀. Testacea. Caput inferius fusco varium. Oculi remoti. Pronotum ellipticum, disco flavicante, punctis nonnullis fuscis. Elytra abdomen superantia, parum elongata. Alæ venis fuscis; campo anteriore fusco-reticulato, venis costalibus parum numerosis, apice vix incrassatis; vena ulnari 3–4-ramosa. Pedes testacei. Abdomen rufo-flavescens, leviter fusco-umbratum, marginibus pallidis. Lamina supra-analis late trigonalis, apice brevissime fissa, ab ultimo segmento ventrali parum superata. Cerci graciles.
Long. 11·25; elytr. 11, latit. elytr. 4, pronot. 3, latit. pronot. 5 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

Very close to *B. azteca*, but somewhat smaller; the lamina supra-analis very slightly split at the end; the wings rather shorter; the vena mediastina forming only two branches.

7. **Blatta totonaca**, Sauss.

Blatta totonaca, Sauss. Rev. et Mag. de Zool. 1869, p. 165; Mém. Mex., Blatt. p. 101. 40; Miss. Scient. Mex., Orthopt. p. 37. 13, t. 1. fig. 23.

Hab. Mexico, Orizaba (*Mus. Genavense*).

[8. **Blatta supellectilium**, Serv.

Phyllodromia supellectilium, Serv. Orth. p. 114. 44; Brunn. de W. Syst. Blatt. p. 98. 11 (1865); Savigny, Descript. de l'Égypte, Orth. t. 2. fig. 19; Sauss. Miss. Scient. Mex., Orthopt. p. 39. 14.

Blatta cubensis, Sauss. Rev. et Mag. de Zool. 1862, p. 166; Mém. Mex., Blatt. p. 108. 46, figg. 14, 15 (♀ ♂).

Phyllodromia cubensis, Brunn. de W. Syst. Blatt. p. 109. 29.

Hab. Brazil; Antilles, Cuba (*Saussure*).—Tropical Africa (*Mus. Genavense*); Mauritius.]

9. **Blatta fraterna**, sp. n.

♂. Sat minuta, testacea. Oculi remoti. Frons inter illos vitta, necnon linea transversa supra-antennali, fuscis. Facies punctis nonnullis fuscis. Pronotum ellipticum, margine posteriore vix arcuato, disco flavicante, punctis rarioribus fuscis. Elytra sat brevia, abdomen superantia. Alæ vitreæ, venis fusco-testaceis; margine anteriore in medio fusco-umbrato; venis costalibus paucis, vix incrassatis. Pedes testacei. Lamina supra-analis trapezina laminam infra-genitalem superans, obtusangulatim incisa, leviter late bilobata. Cerci longissimi, apice articulis valde discretis, ultimo apice fusco. Lamina infra-genitalis margine posteriore lato, leviter arcuato, subinciso, stylis invicem valde remotis ad angulos laterales positis. Pedes testacei.

Long. 11·5; elytr. 11, latit. elytr. 4, pronot. 4, latit. pronot. 5·25 millim.

Hab. Nicaragua, Chontales (*Janson*).

A species much resembling *B. nahua* in the form of its anal parts, but smaller; the eyes more distant, not strongly convergent from above; the elytra much shorter; and the wings with much less numerous costal veins.

10. **Blatta dilatata**, Sauss.

Blatta dilatata, Sauss. Rev. et Mag. de Zool. 1868, p. 98. 6 (♀); Miss. Scient. Mex., Orthopt. p. 32. 7, t. 1. fig. 19 (♀) (nec ♂, ad *Bl. vitream* pertinens).

Lamina supra-analis ♀ trigonalis, sulco divisa, ultimum segmentum ventrale haud superans.
Long. 10; elytr. 9·75, pronot. 3·4, latit. pronot. 5·2 millim.

Hab. Mexico, Orizaba.

11. **Blatta vitrea,** Brunn.

Phyllodromia vitrea, Brunn. de W. Syst. Blatt. p. 109. 28 (♂).
Blatta vitrea, Sauss. Miss. Scient. Mex., Orthopt. p. 30. 6, t. 1. fig. 18 (♂).
Blatta dilatata, Sauss. Rev. et Mag. de Zool. 1868, p. 98. 6 (♂) (nec ♀, cfr. no. 10).

Hab. Mexico, Eastern Cordillera, Sierra de Moyoapam (*Saussure*).

12. **Blatta orizabæ,** Sauss.

Blatta orizabæ, Sauss. Rev. et Mag. de Zool. 1868, p. 355. 8 (♂ ♀); Miss. Scient. Mex., Orthopt. p. 39. 15, t. 1. figg. 24 *a, b.*

Hab. Mexico, Eastern Cordillera, Orizaba (*Saussure*).

13. **Blatta acolhua,** Sauss.

Blatta acolhua, Sauss. Rev. et Mag. de Zool. 1868, p. 99. 8 (♀); Miss. Scient. Mex., Orthopt. p. 40. 16, t. 1. fig. 25 *a.*

Hab. Mexico, Eastern Cordillera (*Saussure*), Vera Cruz (*Schumann*), Teapa in Tabasco (*H. H. Smith*).

14. **Blatta maya,** sp. n.

Pallide testacea, leviter rufescens; pronoti disco rufo-flavido vel obsolete brunneo-irrorato. Elytra mediocriter longa, leviter fulvescentia. Alæ amplæ, venulis transversis campi antici fuscis; venis costalibus apice leviter incrassatis, haud coloratis. Lamina supra-analis ♀ trigonalis, basi carinata, apice breviter fissa, obtuse bidentula, ♂ transversa, margine postico arcuato. Lamina infra-genitalis ♂ in medio producta et impressa, truncata, angulis rotundatis, stylis brevibus, apicalibus, invicem propinquis instructa.
Long. 12; elytr. 12·5, pronot. 4, latit. pronot. 5 millim.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

15. **Blatta zapoteca,** Sauss.

Blatta zapoteca, Sauss. Rev. et Mag. de Zool. 1862, p. 166; Mém. Mex., Blatt. p. 105. 44; Miss. Scient. Mex., Orthopt. p. 34. 10, t. 1. fig. 21.

♀. Media, fulvo-testacea; abdomine fusco vel infuscato. Antennæ basi fuscæ. Caput nigrum, vertice inter oculos flavido, lineolis 4 fuscis; ocellis, macula inter antennas alteraque clypei, flavis. Oculi a supero visi convergentes, invicem remoti. Pronotum testaceum, ellipticum, margine postico vix arcuato, disco fusco-marmorato, amœne multipicturato, lateribus frequenter fusco-punctatis, margine laterali subtiliter fusco. Elytra modice longa, abdomen superantia, fulvescentia, vena humerali et discoidali basi fuscis. Alæ subvitreæ, venis fusco-testaceis; margine anteriore et apice fulvescentibus; venis costalibus apice elongato-incrassatis. Pedes testacei, ad spinas fusco-punctati. Femora superne et interdum subtus fusco-marginata. Tibiæ et articuli tarsorum apice fusci. Lamina supra-analis trigonalis, carinata, apice angulato-incisa. Segmentum ventrale haud superans. Cerci modice longi.
Var. Caput testaceum, fusco-maculatum. Abdomen piceum vel testaceum. Femora vix fusco-marginata.
Long. 14·5; elytr. 13, pronot. 4, latit. pronot. 6·25 millim.

Hab. Mexico (*Saussure*); Guatemala, Capetillo (*Champion*).

A very distinct species, remarkable on account of the curious brown picturing of its pronotum, marmorated with regular drawings, sometimes imitating flowers, or, if more brown is present, with yellow spots.

16. **Blatta chichimeca,** sp. n. (Tab. IV. fig. 22.)

♂. Testacea. Caput subtus punctis 4 brunneis. Oculi in vertice sat remoti, a supero fere paralleli, ab antico in medio leviter producti, rotundati. Pronotum ellipticum, margine posteriore leviter arcuato, in medio haud producto; discus flavidus, remote brunneo-punctatus. Elytra abdomen superantia. Alæ vitreæ, venis brunneis; venis costalibus parum numerosis, longe levissime incrassatis. Vena ulnaris 4–5-ramosa. Venulæ transversæ areæ ulnaris antice et postice incompletæ, inter ramos completæ sed parum numerosæ; primæ invicem remotæ. Vena axillaris posterius biramosa (anterius nonnunquam ramum incompletum ad venam dividentem emittens), subtus marginibus plus minusve brunneis. Tibiæ ad exsertionem spinarum brunneo-punctatæ. Abdomen infuscatum vel fusco-marmoratum, marginibus testaceis; segmenta ultima pallidiora vel testacea. Lamina supra-analis transversa, inter cercos leviter producta, obtusangulata (angulo apicali frequenter deflexo). Cerci testacei, modice longi, articulis basalibus transversis, articulis ultimis tribus paulo longioribus, haud moniliformibus, marginibus potius serratis. Lamina infra-genitalis supra-analem superans in medio inter stylos rotundato producta; styli bini invicem minus remoti quam a cercis.

Long. 13·5; elytr. 15, latit. elytr. 4·8, pronot. 3·5, latit. pronot. 5·25, long. cercorum 2·6 millim.

Hab. Mexico (*Saussure*), Mexico city (*Forrer*), Cuernavaca in Morelos (*H. H. Smith*).

This insect much resembles *B. nahua*, Sauss. It is a little smaller; the wings are not so regularly reticulated; the eyes are more distant, not convergent above; and the cerci are shorter (not moniliform, as in *B. nahua*, ♂). The lamina supra-analis and the lamina infra-genitalis are very differently formed in the two species. *B. chichimeca* may prove to be the male of *B. zapoteca*, Sauss. (?); but it does not possess the same brown picturing of the body, and the elytra are less fulvous, more transparent.

17. **Blatta mexicana,** Sauss.

Blatta mexicana, Sauss. Rev. et Mag. de Zool. 1864, p. 311. 14; Miss. Scient. Mex., Orthopt. p. 28. 3.

Hab. Mexico (*Mus. Parisiense*).

PSEUDOPHYLLODROMIA, Brunn.

Pseudophyllodromia, Brunner de W. Syst. Blatt. p. 111 (1865).
Ellipsidion, Saussure, Rev. et Mag. de Zool. 1864, p. 312 (ex parte).

Synopsis specierum.

1. Femora anteriora subtus in marginis anterioris dimidia parte apicali spinulis minimis piliformibus instructa (ad typum *Platamodem* (antèa, p. 30) pertinentia). Elytra angusta, margine costali subsinuato, venis discoidalibus 2–3. Alæ parum venosæ, vena ulnari 2–3-ramosa.—Pseudophyllodromia, Br.*

   Rufo-castanea, abdomine rufo-flavo; pronoti disco nigro, luteo-lineolato.—1. *venosa*, Sss.

11. Femora anteriora margine anteriore spinis numerosis et ad apicem armata. Elytra latiora, margine costali arcuato, multivenosa. Alarum campus anterior latus, multivenosus, posterior reticulatus.—Macrophyllodromia †, nob.

    Valida, rufescens; pronotum flavidum, nigro-bivittatum.—2. *maximiliani*, Sss.

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* The venulation of the elytra much resembles that of *Thyrsocera*.

† The venulation of the elytra and wings is very different from that of *Phyllodromia*, *Thyrsocera*, and allied genera; it is more like that of *Nyctobora*.

1. **Pseudophyllodromia venosa,** Sauss. (Tab. III. fig. 30.)

Blatta venosa, Sauss. Rev. et Mag. de Zool. 1864, p. 310. 13; Mém. Mex., Blatt. p. 106. 45.

Subtus testacea. Caput rufescens; palpis albidis, basi fuscis. Antennæ fuscæ, articulis primis 2 sequentibusque subtus luteis, scapo apice puncto fusco. Vertex late prominulus. Pronotum transverse ellipticum, margine posteriore in medio leviter producto, rotundato. Discus fusco-niger, linea longitudinali in medio angustata, punctis 2 in medio disco, vittaque utrinque irregulari vel interrupta flavis; marginibus lateralibus testaceo-pellucidis. (Variat disco nigro, flavido-multiguttato.) Elytra rufo-castanea, elongata, angusta; margine costali ultra medium subsinuato, in requiete abdominis margines obtegentia et superantia; margine costali basi vittisque inter venas costales, 2 in campo anali, 1 inter venam discoidalem et ulnarem basi, alteraque brevi ad basin areæ medio-discoidalis, luteis. Vena discoidalis tantum furcata, ultra furcam curvata (ut in g. *Thyrsocera*), venæ longitudinales campi discoidalis propter hoc tantum 3. Alæ leviter griseo-flavicantes, splendide nitidæ, venis rufo-castaneis. Venulæ costales fuscæ, longe incrassatæ; margo costalis magna parte fuscus. Vena ulnaris biramosa. Venulæ transversæ campi radiatæ inter radios tantum 1; inter ramos axillares et inter radios internos 2. Pedes testacei. Abdomen rufo-aurantium. Cerci longiusculi, rufescentes, frequenter fusco-umbrati, apice graciles, acuti.

♀. Lamina supra-analis brevis, valde transversa, margine postico transverso; segmentum ventrale ultimum trigonali-incisum.

♂. Lamina supra-analis brevis, transversa, margine postico obtusangulato, rotundato. Lamina infra-genitalis parabolica, in medio stylis 2 crassis instructa.

Var. Abdomen fascia intramarginali fusca, margine pallido. Alæ apice leviter infuscatæ.—*b*. Elytra vittis luteis nullis.

Long. 9·25; elytr. 9·5, pronot. 2·5, latit. pronot. 3·6 millim.

Hab. Mexico (*Saussure*), Teapa in Tabasco (*H. H. Smith*).

I first described this species under the name *Blatta venosa* (loc. cit.). Subsequently (Miss. Scient. Mex., Orthopt. p. 44. 3) I united it with *B. angustata*, Latr., from Colombia, Guiana, and Peru; but it is perhaps distinct from that species, the ulnar vein of the wing having only two branches, and the apical margin being not or only very slightly infuscated, while in *B. angustata* the wings are infuscated on the apical margin and have three ulnar branches. It is difficult to decide whether *B. venosa* and *B. angustata* are to be considered as distinct, or as mere varieties of one and the same species (*Saussure*).

Many specimens were sent by Mr. Smith from Tabasco.

2. **Pseudophyllodromia maximiliani,** Sauss.

Pseudophyllodromia maximiliani, Sauss. Mélang. Orthopt. i. 2e fasc. p. 100. 3, fig. 35.

Hab. Mexico (*Mus. Genavense*).

CERATINOPTERA, Brunn.

Ceratinoptera, Brunn. de W. Syst. Blatt. p. 75; Saussure, Miss. Scient. Mex., Orthopt. p. 20.

Caput crassiusculum, convexum, oculis valde remotis. Pronotum corneum antice et postice truncatum, utrinque deflexum, disci impressionibus nullis vel vix ullis. Elytra cornea. Alæ venis costalibus brevibus parum obliquis; vena ulnari ramos apicales emittenta. Femora spinosa; anteriora margine interno dimidia parte basali spinis 4–5, dimidia parte apicali inermi. (Lamina supra-analis majuscula, ♀ incisa, ♂ trigonalis vel transversa.) Cerci parum elongati, depressi, acuti, 9-articulati.

Synopsis specierum.

a. Castanea. Elytra ♀ ♂ abdomen superantia. Lamina supra-analis plana, polita, trigonalis.—1. *olmeca,* Sss.

aa. Testaceæ, crassiusculæ; lamina supra-anali ♀ incisa.

b. Pronoto lineis 2 arcuatis elytrisque vitta undata, fuscis. Lamina supra-analis ♂ truncata.—[2. *diaphana,* Fabr.]

bb. Pronoti disco flavido, fusco-punctato; elytris pellucidis. Lamina supra-analis ♂ transversa.—[3. *lutea,* sp. n.]

1. **Ceratinoptera olmeca,** Sauss.

Ceratinoptera olmeca, Sauss. Rev. et Mag. de Zool. 1868, p. 354. 3 (♀ ♂); Miss. Scient. Mex., Orthopt. p. 20. 2, t. 1. figg. 17 *a*, 17 *b*.

Hab. Mexico, Orizaba (*Saussure*).

[2. **Ceratinoptera diaphana,** Fabr. (Tab. III. figg. 27–29.)

Blatta diaphana, Fabr. Ent. Syst. ii. p. 11. 25; Burm. Handb. ii. p. 496. 3; Sauss. Mém. Mex., Blatt. p. 95. 35.

Ceratinoptera diaphana, Brunn. de W. Syst. Blatt. p. 76. 1; Sauss. Miss. Scient. Mex., Orthopt. p. 20. 1.

Latiuscula, pallide testacea. Frons inter oculos fusca. Pronotum latum, corneum, antice truncatum, disco flavido, circumcirca fusco-marginatum, utrinque margine fusco undato; margine posteriore fusco; disco medio pictura anchoriformi fusca, postice fusco-punctato. Elytra abdomen vix superantia, diaphano-testacea, vitta undata castanea, apice rufescente (vel campo discoidali fusco-rufo, basi inter venam humeralem et analem fusco, dehinc extus pallide sinuato; venis costalibus partim fusco-rufis). Sulcus analis tantum apice perspicuus, ad medium marginem suturalem desinens. Alæ subvitreæ, campo anteriore apice brunescente, vena ulnari 3-ramosa. Pedes testacei; femora antica supra fusco-lineata, subtus margine anteriore spinulis piliformibus minimis instructo. Abdomen latiusculum, nigrum, marginibus luteis. Lamina supra-analis ♀ late trigonalis, apice minute incisa; ♂ late trapezina, apice subsinuata, angulis rotundatis. Cerci fusiformes, depressi, longe pilosi, margine interno et ante apicem fusco-umbrati. Lamina infra-genitalis ♂ rufescens, stylis crassis inæqualibus instructa.

Var. Pronoti discus anterius haud fusco-limbatus.

Long. 7·5; elytr. 6·75, pronot. 3, latit. pronot. 4·5 millim.

Hab. Antilles, Cuba, Porto Rico, St. Thomas (*Mus. Genavense*).]

[3. **Ceratinoptera lutea,** sp. n.

Sat minuta, pallide testacea. Antennæ brunneæ, parte basali longe testacea. Caput nonnunquam brunneo-punctatum, fronte inter oculos linea fusca, vel immaculatum. Pronotum obsolete bi-impressum, rotundato-trapezinum, pellucens, disco et margine postico flavido; illo fusco-punctato et lineolato vel immaculato. Elytra ♀ abdominis longitudine, venis perspicuis. Alæ subvitreæ vel flavicantes, venis decoloribus vel partim aurantiis, margine costali et apice fulvo-rufescentibus. Vena ulnaris recta, indivisa vel apice furcata. Apex inter campos area membranacea trigonali intercalata minuta instructus; margo apicalis ♀ subsinuatus, ♂ sinuatus. Pedes pallide testacei; tibiis supra ad spinas fusco-punctatis. Femora anteriora nonnunquam subtus fusco-lineata, margine interno toto spinoso. Abdomen plus minus infuscatum, marginibus pallidis, vel haud infuscatum. Cerci fusco-varii.— ♀. Lamina supra-analis transversa,

in medio incisa.—♂. Elytra paulo longiora lamina supra-analis transversa, integra. Lamina infra-genitalis subtransversa, margine arcuato, stylis 2 minimis fuscis.

♀. Long. 7·5; elytr. 5, pronot. 2, latit. pronot. 3 millim.

♂. Long. 6·5; elytr. 5·6, pronot. 2, latit. pronot. 3 millim.

Hab. NORTH AMERICA, Georgia, Louisiana.

This species will probably be found in North Mexico.]

PARACERATINOPTERA, Sauss.

Paraceratinoptera, Saussure, Rev. et Mag. de Zool. 1868, p. 358; Miss. Scient. Mex., Orthopt. p. 87.

1. **Paraceratinoptera nahua,** Sauss.

Paraceratinoptera nahua, Sauss. Rev. et Mag. de Zool. 1868, p. 357. 14 (♀ ♂); Miss. Scient. Mex., Orthopt. p. 87. 1, t. 1. fig. 30, t. 2. figg. 47, 47 E.

Hab. MEXICO (*Saussure*); GUATEMALA (*coll. Dohrn*).

2. **Paraceratinoptera dohrniana,** sp. n.

♂. Obscure testacea. Caput castaneum, ore et ocellis testaceis. Antennæ fuscæ, apice rufescentes. Pronotum fusco-castaneum, corneum, impressionibus nullis; marginibus lateralibus deflexis, arcuatis; margine posteriore late transverso, subangulato; disci prope basin maculis 2 marginibusque lateralibus angustissime fulvis. Elytra abdomen superantia, rufo-castanea, venis obsoletis, apice membranacea ac pallidiora. Alæ subhyalinæ, venis testaceis, venulis costalibus 7–8 elongato-clavatis, brunneis; vena ulnari tantum apice breviter furcata vel biramosa. Pedes obscure testacei. Femora antica subtus margine anteriore spinulis minimis piliformibus obsita, margine posteriore spina unica; femora reliqua in utroque margine spinosa. Abdomen testaceo-piceum. Lamina supra-analis trigonalis, leviter incisa. Cerci longiusculi, depressi, fusiformes. Lamina infra-genitalis stylis 2 crassis instructa.—A *P. nahua* differt elytris et alis longioribus, sulco anali valde impresso.

Long. 9; elytr. 9, pronot. 2·75, latit. pronot. 3·5 millim.

Hab. GUATEMALA (*coll. Dohrn*).

ANISOPYGIA*, Sauss. (Tab. I. figg. 25, 26.)

Anisopygia, Saussure, Societas Entomologica, 1893, p. 57.

♂. Habitus et formæ generis *Ceratinopteræ.* Antennæ crassiusculæ. Caput convexum, oculis valde remotis. Pronotum corneum, anterius et posterius truncatum, utrinque deflexum. Elytra cornea, abbreviata. Alæ minutæ. Segmentum dorsale ultimum valde sinuatum. Lamina supra-analis maxima, *in partes 2 inæquales fere usque ad basin divisa,* dextra rotundata, sinistra angustior, apice hebetata. Cerci mediocres, depressiusculi. Lamina infra-genitalis ♂ irregularis, stylis inæqualis instructa.—Feminæ ignotæ.

This remarkable genus may be known by the irregular anal segment, which has the dorsal plate very deeply divided into two large irregular lobes. We find a sort of transition to that anomaly in some species of *Blatta,* in which the end of the lamina supra-analis is notched in an irregular way, its angles forming two small unequal processes arched one against the other (*B. adspersicollis,* Stål).

* *ἄνισος,* unlike; *πυγὴ,* buttock.

1. **Anisopygia jocosicluna,** Sauss. (*A. jocosiclunis*, Tab. I. figg. 25, 26.)

Anisopygia jocosicluna, Saussure, Societas Entomologica, 1893, p. 57.

♂. Fusco-castanea. Antennæ basi rufescentes; os et ocelli fulvi. Pronotum impressionibus vix ullis, sparse punctatum, margine anteriore et lateralibus flavo-fulvis; margine posteriore vix angulato. Elytra abdominis segmenta 3–4 tegentia, apice rotundata, venis distinctis; area costali fulvo-flava, margine suturali sese leviter tegentia. Alæ minutæ, rotundatæ, venis et margine anteriore fusco-rufis, vena mediastina ramulis incompletis 3. Pedes fusco-rufescentes vel fusco-testacei. Femora anteriora margine interno basi spinis 3–4, apice spinulis minimis numerosis piliformibus armato. Abdomen fusco-nigrum. Segmentum 5^{m} in medio sinuatum et subelevatum, 6^{m} tota latitudine angulatim excisum et in medio incisum; 7^{m} tota latitudine arcuatim sinatum ac in medio carinulatum. Lamina supra-analis valde deformis; ejus incisura lata, basi rotundata; ejus lobi æquilongi, lobo dextro late rotundato, apice rufescente, lobo sinistro intus rotundato-marginato, trigonali, apice anguste producto, rotundato-hebetato. Cerci mediocres, subacuminati. Lamina infra-genitalis convexa, apice compressa, irregulariter rotundata, laminam supra-analem superans, stylis 2 valde inæqualibus in medio margine instructa; his invicem propinquis, dextro longiore, crasso, obtuso, sinistro frequenter abortivo. Margo posterior laminæ infra-genitalis anguste flavus, irregularis, inter stylos leviter sinuatus, juxta stylum dextrum in processum minutum trigonale productus.

Long. 9·5; elytr. 4·5, pronot. 2·75, latit. pronot. 4 millim.

Hab. GUATEMALA, Capetillo (*Champion* et *coll. Dohrn*).

TEMNOPTERYX, Brunn.

Temnopteryx, Brunner de W. Syst. Blatt. p. 83.

Platamodes, Stål (ex parte).

Pronotum corneum, parabolicum, convexum, impressionibus discoidalibus nullis vel obsoletis. Elytra truncata (vel ♂ tantum abbreviata), cornea, articulata, sese sæpius intus leviter tegentia, sulco anali perspicuo vel obliterato. Alæ minimæ. Lamina supra-analis ♀ trigonalis, apice subrotundata vel leviter incisa.

Synopsis specierum.

I.

1. Femora anteriora ad typum 1^{m} pertinentia. (Comp. p. 30.) [*Platamodes,* Stål, ex parte.]
   - *a.* Pronotum et elytra unicolora, testacea vel rufescentia. Elytra ♀ primum abdominis segmentum tegentia, apice *extus* rotundata.
     - *b.* Abdomen totum nigrum. Pronotum et elytra rufescentia.—[1. *texensis,* sp. n.]
     - *bb.* Abdomen luteo-marginatum. Pronotum et elytra testacea.
       - *c.* Pronotum totum testaceum.—2. *tarasca,* Sss.
       - *cc.* Pronotum brunneo-lineolatum. Elytra ♂ abdominis segmenta 6 tegentia, haud truncata, apice attenuata, rotundata.—3. *kaupiana,* Sss.
   - *aa.* Pronotum bicolor.
     - *b.* Pronotum et elytra testacea. Elytra 1^{m} abdominis segmentum tegentia, angulo externo-apicali rotundato.
       - *c.* Pronotum pallide testaceum, nigro-bivittatum.—4. *otomia,* Sss.
       - *cc.* Pronotum rufescens, disco fusco-vario:
         - *d.* utrinque fusco-umbrato.—[1. *texensis,* var.]
         - *dd.* fusco-punctato.—5. *nitida,* sp. n.

bb. Nigro-castaneæ vel rufescentes. Pronotum et elytra lateraliter flavo-limbata. Pedes rufescentes.

c. Elytra oblique truncata, apice ad costam angulata, sulco anali nullo. Lamina supra-analis ♀ trigonalis vel apice truncata.

d. Elytra valde oblique truncata, acutangula, margine suturali quam margo costalis duplo breviore, margine apicali subsinuato, apice anguste rotundato. Pronotum et elytra anguste flavo-limbata.—6. *limbata*, Sss.

dd. Elytra transverse, parum oblique truncata, margine suturali quam margo costalis haud duplo breviore, angulis hebetatis. Pronotum et elytra latiuscule flavo-limbata.—7. *sumichrasti*, Sss.

cc. Elytra apice rotundata.

d. Elytra coriacea, apice haud attenuata, late rotundata, margine costali recto, venis perspicuis, sulco anali distincto.—8. *guatemalæ*, sp. n.

dd. Elytra cornea, attenuata, anguste rotundata, margine costali arcuato, sulco anali perspicuo.—9. *fissa*, sp. n.

bbb. Ferruginescens. Lamina supra-analis trigonalis.—[10. *major*, sp. n.]

11. Femora anteriora ad typum 2^{m} pertinentia.

* Pronotum corneum, impressionibus nullis, plus minus parabolicum. Elytra in utroque sexu truncata, vel in ♂ abbreviata, intus sese leviter tegentia. Femora anteriora in margine anteriore toto, saltem in dimidia parte apicali spinis subæqualibus invicem remotis armata.—[11. *brevipennis*, Sss.]

II.

a. Elytra in utroque sexu distincte truncata (*cfr*. Tab. III. fig. 31):

b. oblique truncata, angulo apicali costali acutiore:

c. breviter obliquissime truncata.—6. *limbata*.

cc. minus breviter, parum oblique truncata;

d. angulo apicali subacuto.—7. *sumichrasti*.

dd. angulo apicali rotundato.—[1. *texensis*.]

bb. transverse truncata:

c. angulo apicali costali rotundato.—4. *otomia*; [11. *brevipennis*].

cc. angulis binis apicalibus rotundatis.—8. *guatemalæ*.

aa. Elytra apice, saltem angulo costali, rotundata (*cfr*. Tab. IV. figg. 24, 29):

b. truncata, apice toto rotundato, arcuato,

c. parum fortiter arcuato.—8. *guatemalæ*.

cc. semiorbiculariter arcuato.—[10. *major*.]

bb. abbreviata, margine suturali recto, margine costali et apicali ad unum arcuato, angulo apicali-suturali solum acuto, angulo apicali costali nullo; in maribus longiora apice attenuato. (Species testaceæ, ad genus *Ceratinopteram* vergentes.)

c. Elytra ♀ margine apicali obliquo.—2. *tarasca*; 3. *kaupiana* ♀.

cc. Elytra attenuata, apice anguste rotundata, margine apicali nullo.

d. Castanea, elytris brevibus.—9. *fissa*.

dd. Pronoto et elytris testaceis; elytris longioribus.—3. *kaupiana* ♂; 5. *nitida* ♂ ♀.

III.

a. Lamina supra-analis ♀ trigonalis, integra.—[1. *texensis*] ; 6. *limbata* ; 2. *tarasca* ; 7. *sumichrasti* ; [10. *major*] ; [11. *brevipennis*].

aa. Lamina supra-analis ♀ apice minute incisa.—3. *kaupiana* ; 4. *otomia* ; 5. *nitida* ; 8. *guatemalæ* ; 9. *fissa*.

IV.

a. Species ad typum *Platamodem* (anteà, p. 30) pertinentes. — [1. *texensis*] ; 2. *tarasca* ; 3. *kaupiana* ; 4. *otomia* ; 5. *nitida* ; 6. *limbata* ; 7. *sumichrasti* ; 8. *guatemalæ* ; 9. *fissa* ; [10. *major*].

aa. Species ad typum *Phyllodromia* (anteà, p. 30) pertinens.—[11. *brevipennis*].

[1. **Temnopteryx texensis,** sp. n. (Tab. III. fig. 31.)

♀. Rufo-testacea vel rufida, abdomine nigro. Antennæ brunneæ vel griseo-ferrugineæ, 1° articulo testaceo. Maculæ ocellares luteæ. Pronotum parabolicum, corneum, margine laterali flavo-testaceo. Elytra segmentum mediale tegentia, venosa, valde coriacea, area basali costali flavo-testacea, angulo apicali late rotundato, margine posteriore leviter obliquo, subsinuato, margine suturali quam margine costali paulo breviore, campo anali piriformi. Pedes rufo-testacei vel testacei. Lamina supra-analis ♀ distincte trigonalis ; segmento 6° dorsali in medio arcuato. Cerci nigro-castanei.

Var. *a*. Pronoti discus utrinque castaneus, in medio rufescens.—*b*. Pronoti margo anterior anguste luteus.—*c*. Pronoti margo posterior partim pallidus vel maculis 2 obsoletis pallidis.—*d*. Cerci brunnei vel rufescentes.—*e*. Elytra 1um abdominis segmentum tegentia, margine apicali in parte discoidali magis sinuata. Lamina supra-analis latius trigonalis, subrotundata.

Long. 14·5 ; elytr. 4·5, pronot. 4·5, latit. pronot. 6 millim.

Hab. North America, New Mexico, Texas (*Mus. Genavense*).]

2. **Temnopteryx tarasca,** Sauss.

Blatta tarasca, Sauss. Mém. Mex., Blatt. p. 95. 36 (1864).

Temnopteryx tarasca, Sauss. Miss. Scient. Mex., Orthopt. p. 23. 2 (♀).

Hab. Mexico.

3. **Temnopteryx kaupiana,** Sauss. (Tab. IV. figg. 24–26.)

Temnopteryx kaupiana, Sauss. Mél. Orthopt. ii. ive fasc. p. 92. 1 (♂ ♀) (1872).

♂. Abdominis segmenta 5^{m}–7^{m} margine postico tota latitudine obtusangulatim sinuata ; lamina supra-analis sat grandis, duplo latior quam longior, margine postico leviter arcuato, in medio minute inciso.

♀. Long. 12 ; elytr. 4·25, pronot. 3·25, latit. pronot. 5 millim.

♂. Long. 9·5 ; elytr. 5·75 millim.

Hab. Mexico, Moyoapan (*Saussure*).

This species might nearly as well be placed in the genus *Ceratinoptera*, the male having its elytra but little abbreviated.

4. **Temnopteryx otomia,** Sauss.

Temnopteryx otomia, Sauss. Rev. et Mag. de Zool. 1868, p. 98. 4 ; Miss. Scient. Mex., Orthopt. p. 24, t. 1. figg. 15, 15 *a*.

Lamina supra-analis ♀ apice incisa, in medio convexa, posterius carinata ; ♂ margine postico arcuato, integro.

♀. Long. 9·5 ; elytr. 3, pronot. 2·75, latit. pronot. 4·2 millim.

♂. Long. 8 ; elytr. 3, pronot. 2·6, latit. pronot. 4 millim.

Hab. Mexico, Eastern Cordillera (*Mus. Genavense*).

5. **Temnopteryx nitida,** sp. n. (Tab. IV. figg. 31, 32.)

♀. Fulvo-testacea, abdomine nigro. Frons inter oculos nigra. Facies brunneo-maculosa. Antennæ brunneæ. Pronotum testaceum, antice truncatum; disco flavido, utrinque leviter fusco-marmorato. Elytra haud truncata, segmenta 3 abdominis tegentia, apice attenuata, ad marginem suturalem minute rotundata; margine costali toto arcuato, margine suturali recto; venæ obsolete prominulæ, sulcus analis distinctus, ad $\frac{3}{5}$ marginis suturalis extensus; area mediastina diaphano-testacea. Alæ minutæ, vena mediastina, humerali et venis campi postici, fuscis; vena discoidali furcata; vena ulnari tenuissima. Tibiæ ad spinas fusco-punctatæ. Abdominis margines ochracei. Lamina supra-analis ♀ trigonalis, ochraceo-limbata, basi sulcatæ, apice truncata, minute subincisa. Cerci subtus et basi fusci.
Long. 15; elytr. 7·25, pronot. 4, latit. pronot. 5·75 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

This species resembles *T. kaupiana* and *T. tarasca* in having the elytra attenuated and rounded at the end, not truncated. The elytra of the female are longer and not acute at their posterior end, rounded at the tip, and different in this from the two species (♀) referred to. The size is also larger. *T. nitida* makes a transition to *Ceratinoptera*.

6. **Temnopteryx limbata,** Sauss.

Temnopteryx limbata, Sauss. Rev. et Mag. de Zool. 1868, p. 98. 5; Miss. Scient. Mex., Orthopt. p. 25. 5, t. 1. figg. 16, 16 *a*.

Lamina supra-analis ♂ trigonalis, apice rotundata, vel irregularis.
♀. Long. 9·5; elytr. 2·5, pronot. 3, latit. pronot. 4·5 millim.
♂. Long. 8·5; elytr. 2·5, pronot. 2·75, latit. pronot. 3·6 millim.

Hab. Mexico, Eastern Cordillera, Santa Cruz, Moyoapan (*Saussure*).

7. **Temnopteryx sumichrasti,** Sauss.

Temnopteryx sumichrasti, Sauss. Rev. et Mag. de Zool. 1868, p. 97. 3; Miss. Scient. Mex., Orthopt. p. 23. 3, t. 1. fig. 14.

Lamina supra-analis ♂ brevis, transversa.

Hab. Mexico, Eastern Cordillera, Moyoapan (*Mus. Genavense*).

In pine-woods and on the Cordillera.

8. **Temnopteryx guatemalæ,** sp. n. (Tab. IV. figg. 27, 28.)

♀. Fusco-castanea. Antennæ fusco-rufæ. Caput fuscum, crassiusculum, convexum; ocellis luteis. Pronotum fuscum, corneum, impressionibus disci nullis, margine posteriore leviter angulato; marginibus lateralibus parum arcuatis; margine anteriore anguste, lateralibus latius, flavo-aurantiis. Elytra abbreviata, abdomen totum liberantia, castanea, margine laterali fulvo, margine posteriore rotundato, per marginem suturalem sese tangentia; venis leviter prominulis, distincte perspicuis, inter venas punctata; sulco anali ad apicem marginis suturalis extenso. Pedes rufo-testacei; femora anteriora subtus margine interiore spinis 4–5, dimidia parte apicali inermi. Lamina supra-analis late rotundata, margine apicali flavido, in medio minute inciso; disco medio trigonali-tumido. Cerci depressi laminam infra-genitalem leviter superantes, parum lati, paralleli apice acuto, rufescentes.
Long. 10·5; elytr. 2·8, pronot. 3, latit. pronot. 4 millim.

Hab. Guatemala, in the city (*Champion*).

One mature female specimen and numerous larvæ.

9. **Temnopteryx fissa,** sp. n. (Tab. IV. figg. 29, 30.)

♀. Castanea, ocellis flavis. Pronotum subparabolicum, antice vix truncatum, angulis posticis minute rotundatis; marginibus lateralibus latiuscule flavis, margine anteriore obsoletius flavo, retro lineam flavam emittente; margine posteriore transverso, haud angulato. Elytra cornea, polita, venis haud prominulis, 3^{m} abdominis segmentum tegentia, apice attenuata, rotundata, margine suturali recto, margine costali toto et ad apicem arcuato. Sulcus analis perspicuus, ad $\frac{2}{3}$ marginis suturalis extensum. Color elytrorum flavido-castaneus, parte basali campi analis fusco-castaneus, margine costali basi flavo. Pedes flavidi; coxis fusco-variis; tibiis supra fusco-maculatis, posticis apice et intus partim fuscis. Abdomen nigro-castaneum, segmentis rufescenti-limbatis, angulis lateralibus et margine, flavidis. Lamina supra-analis transverse trigonalis, sat profunde fissa vel incisa, bilobata. Cerci breviusculi, fusiformes, flavescentes, basi nigri.

Long. 10·5; elytr. 4·5, pronot. 3, latit. pronot. 4·5 millim.

Hab. GUATEMALA (*Mus. Genavense*).

[10. **Temnopteryx major,** sp. n.

♀. Valida, rufo-castanea vel rufescens. Pronotum corneum, impressionibus nullis, marginibus lateralibus flavicantibus, margine postico subangulato. Elytra coriacea, polita, venis prominulis, segmentum 1^{m} tegentia, apice tota rotundata; margine costali apice late rotundato; margine suturali recto, apice arcuato. Sulcus analis profundus, ante apicem vix sinuatus, ad $\frac{3}{4}$ marginis suturalis attingente. Alæ *minimæ*, acutæ, ferruginescentes; area mediastina flava. Lamina supra-analis grandis, trigonalis, carinata, apice hebetato.

Long. 20; elytr. 7, pronot. 5·5, latit. pronot. 7·75.

Hab. NORTH AMERICA, Tennessee (*Mus. Genavense*).]

[11. **Temnopteryx brevipennis,** Sauss.

Ischnoptera brevipennis, Sauss. Mém. Mex., Blatt. p. 80. 20, fig. 11 (syn. Blanch. exclus.).
Temnopteryx brevipennis, Sauss. Miss. Scient. Mex., Orthopt. p. 23. 1.

Hab. CHILI.]

LOBOPTERA, Brunn.

Loboptera, Brunner de W. Syst. Blatt. p. 79 (1865).

1. **Loboptera annulicornis,** sp. n. (Tab. I. fig. 24.)

♀. Fusco-nigra, *L. decipienti* paulo major. Antennæ fuscæ, ultra medium annulo pallide flavo ex articulis circiter 8 composito. Ocelli nulli. Os ferrugineum. Elytra lanceolata, longe acuminata, apice hebetata, mesonotum haud superantia. Pedes, saltem femorum basis, tibiæ et tarsi rufescentia. Femora anteriora margine interno spinis 4, parte apicali inermi. Lamina supra-analis late trigonalis.

Long. 11·75; elytr. 1·6, pronot. 3·25, latit. pronot. 4·8 millim.

Hab. MEXICO, Amula in Guerrero 6000 feet (*H. H. Smith*).

This species is very distinct on account of its somewhat **V**-shaped elytra, these being less squamiform than usual. The fore femora are spined as in typical *Platamodes* and not as in *L. decipiens*, in which they are spined in their whole length (Blattinæ, *Type* 2, anteà, p. 30).

Tribus NYCTOBORINÆ.

Nyctiboridæ, Brunner de W. Revis. du Syst. des Orth. p. 11.

Oculi invicem parum remoti. Pronotum et elytra sericea. Mesonoti et metanoti margo posticus processubus 2 membranaceis styliformibus instructus. Elytra et alæ grandia, in longitudinem multivenosa, venis

furcatis; campo marginali plus minus lato, in elytris venis valde obliquis subarcuatis, in alis venis longitudinalibus ramosis obsito. Femorum anteriorum spina genicularis in margine apicali anteriore exserta. Cerci longi.

This Tribe forms a sort of transition from the Blattinæ to the Periplanetinæ on account of the shape of the anal plate and the long cerci. The elytra and wings have quite the neuration of the Periplanetinæ; but the last ventral segment is flat as in Blattinæ, not compressed and sulcate as in Periplanetinæ. The presence of narrow, tongue-like appendices on the margins of the meso- and metanotum shows a further affinity with the Periplanetinæ. The Tribe Nyctoborinæ is peculiar to the hot parts of America. It includes only two genera: *Nyctobora*, in which the claws are furnished with an arolium, and *Megalobatta*, which is destitute of an arolium between the claws.

NYCTOBORA, Burm.

Nyctibora, Burmeister, Handbuch, ii. p. 501; Brunner de W. Syst. Blatt. p. 142.
Nyctobora, Saussure, Mém. Mex., Blatt. p. 65.

Statura majuscula vel mediocris. Oculi valde approximati. Pronotum corneum, subconvexum, antice quam postice magis arcuatum; in maribus parvum. Elytra et alæ, quando condite explicata, longa ac lata, campo marginali latiusculo. Pedes spinosissimi. Femora 2ª, 3ª spinis longis remotis in utroque margine; anteriora in margine antico spinis minoribus numerosis confertis, in margine postico spinis paucis remotis, armata. Femora insuper omnia spinis apicalibus 1:1, in anterioribus 2:1, instructa. Tarsi inter ungues aroliis magnis instructi. Abdominis segmenta ultima utrinque trigonali-producta. Lamina supra-analis ♀ leviter prominula, trigonali-rotundata, ♂ trapezina. Cerci sat longi. Pronotum et elytra griseo-sericea.

Synopsis specierum.

1. Elytra et alæ ♀ ♂ condite explicata.—NYCTOBORA, Burm.
   a. Oculi ♂ contigui.—1. *mexicana*, Sss.
   aa. Oculi ♂ haud contigui, vel subcontigui.
      b. Omnino fuscæ; elytrorum campo marginali angustiore.
         c. Minor, oculis ♂ paulo propioribus.—2. *azteca*, sp. n.
         cc. Major, oculis ♂ paulo magis remotis.—[*intermedia*, Sss.]
      bb. Pronoto utrinque flavo-limbato.—[*sericea*, Burm.]
11. Elytra et alæ ♀ ♂ truncata, cornea.—HEMINYCTOBORA, nob.
   Nigra; alis minutis rufis.—3. *truncata*, sp. n.

1. **Nyctobora mexicana**, Sauss.

Nyctobora mexicana, Sauss. Mém. Mex., Blatt. p. 66. 12; Brunn. de W. Syst. Blatt. p. 147. 5; Sauss. Miss. Scient. Mex., Orthopt. p. 68. 1, t. 2. figg. 38, 38 *b*.

Media; castanea; elytris castaneo-rufescentibus. Elytra et alæ in utroque sexu complete explicatæ; pronotum itaque in utroque sexu elliptico; in maribus quam in *N. azteca* minor.
♂. Long. 25–27; elytr. 32·5, latit. elytr. 11·75, pronot. 7, latit. pronot. 9·8 millim.
♀. Long. —?; elytr. 28·5, latit. elytr. 11·5, pronot. 7·6, latit. pronot. 12 millim.

Hab. MEXICO (*Saussure*); GUATEMALA, San Juan in Vera Paz (*Champion*).

2. **Nyctobora azteca,** sp. n. (Tab. IV. fig. 34.)

♂. Minor, castanea vel rufo-castanea, cinereo-tomentosa, subtus nigra; abdomine supra, antennis pedibusque nigris. Alarum venæ ferrugineæ; campus anterior ferruginescens, margine anteriore ferrugineo, limbo apicali leviter grisescente; campus posterior vitreus, limbo posteriore levissime nebuloso. Lamina supra-analis ♂ trapezino-rotundata; lamina infra-genitalis rotundata, elytris crassis.

Long. 20; elytr. 23, latit. elytr. 8·5, pronot. 5·8, latit. pronot. 8·5 millim.

Hab. GUATEMALA, Capetillo (*Champion*).

Extremely like *N. mexicana*, Sauss., except in its much smaller size.

3. **Nyctobora (Heminyctobora) truncata,** sp. n. (Tab. IV. fig. 33.)

♀. Valida pro genere, tota nigra, pilosa. Caput sparse punctatum. Oculi in vertice invicem valde approximati. Maculæ ocellares flavæ distinctæ. Antennæ nigræ. Pronotum breviusculum, tenuiter punctulatum, margine posteriore leviter rotundato-angulato. Elytra transverse truncata, segmentum mediale leviter superantia, angulo externo rotundato. Campus marginalis rugulatus; campus discoidalis punctulatus, venis obsolete prominentibus. Sulcus analis arcuatus, ad marginem suturalem profundus, in illum perpendiculariter incidens; campus analis propter hoc haud piriformis, apice haud attenuatus. Alæ minutæ, rufescentes. Pedes nigri, spinis obscure rufis; tarsis subtus testaceis. Femora in margine posteriore longiuscule spinosa, in margine anteriore brevius spinosa, basi inermia; femora anteriora brevius spinosa, basi inermia, in margine anteriore spinis brevibus invicem propinquis circiter 8 armata. Lamina supra-analis grandis, punctata, pilosa, semiorbiculariter arcuata, apice vix incisa.

♂. Sextum abdominis segmentum dorsale bisinuatum. Lamina supra-analis sensim ut in ♀, rotundata, subincisa.

Larva ♀. Lamina supra-analis trigonalis, apice leviter truncata.

♀. Long. 20·5; elytr. 7, pronot. 6, latit. pronot. 9·2 millim.

♂. Long. 18·6; elytr. 7, pronot. 5·8, latit. pronot. 9 millim.

Hab. MEXICO, Jalisco (*Schumann*, ♀ ♂); GUATEMALA, Capetillo (*Champion*).

MEGALOBLATTA, Dohrn.

Megaloblatta, H. Dohrn, Stett. ent. Zeit. 1887, p. 408.

Statura maxima; color niger. Pronotum et elytra subtiliter sericantia. Vertex ♂ inter oculos angustus. Pronotum sat parvum, plane ellipticum, circumcirca tenuiter marginatum; disco impressionibus 2 obliquis. Meso- et metanotum ♂ posterius utrinque lobum membranaceum spiniformem gerentia. Elytra et alæ maxima, longissima, *latissima*, apice latissime rotundata, venis longitudinalibus numerosissimis, confertis, furcatis; campo marginali latissimo: in elytris venis costalibus numerosis, valde obliquis, subarcuatis, furcatis impleto; in alis venis longitudinalibus, multifurcatis instructo. Alæ campo anteriore latissimo venis omnibus furcatis; campo intermedio latissimo, campo radiato propter hoc minuto. Pedes graciles. Spina genicularis femorum anteriorum in margine apicali interno exserta. Femora anteriora subtus in margine antico, posteriora in margine postico fimbriata; intermedia subglabra. Femora anteriora apice et tibiæ subtus rufo-tomentosa. Femora anteriora spinis apicalibus 2 : 1, intermedia 1 : 1, posteriora 0 : 0; anteriora parum spinosa. Tarsi graciles, articulis subtus carinatis, apice rotundato-tuberculati (vel si mavis apice pulvilis minutis apicalibus flavis instructis); metatarsus posticus subtus remote spinulosus. Arolia inter ungues nulla vel minima, compressa. Abdominis segmenta angulis haud productis; ultimis 2 (♂) angulis valde rotundatis. Ultimum segmentum dorsale ♀ parum, ♂ valde bisinuatum, ♂ in medio rotundato-productum (Tab. V. fig. 15). Lamina supra-analis producta, rotundata, incisa. Cerci longissimi. Pronotum et elytra subtiliter sericea.— ♀ ♀ ultimum segmentum ventrale latum, rotundatum.— ♂ ♂. Pronotum sat parvum. Segmenta ventralia 3 ultima (Tab. V. fig. 16) valde sinuata, angulis rotundatis. Lamina infra-genitalis stylis 2 acutis instructa.

Habitus specierum majorum generis *Blaberæ*.

This genus is a magnificent Central-American type, and is of great interest on account of its affinities.

It resembles the Periplanetinæ, especially the genus *Periplaneta*, in the produced bilobed supra-anal plate and in the very long cerci. In the shape of the last segments of the abdomen, which are not acute at their angles, the short spines to the femora, and the black-violaceous colour of the pronotum and elytra, *Megaloblatta* approaches *Deropeltis*, the colour being quite typical of that genus and foreign to the other American Blattidæ. In other respects *Megaloblatta* imitates in a very remarkable manner the larger species of the genus *Blabera*: in its gigantic size, the approximated eyes, the very large and wide elytra having a very broad marginal field, and, what is very striking indeed, in the claws being destitute of an arolium—the latter character appearing here as if for the sole purpose of imitating the Blaberinæ!

This mimicry is carried to such an extent that at first sight it is very easy to mistake a *Megaloblatta* for a *Blabera*. The resemblance, indeed, is continued even to the less apparent characters, as the loss of the arolia and the arrangement and scarcity of the spines of the femora. It is only by an examination of the characters of the abdomen (unspined angles of the segments, long anal plate, very long cerci) that the real position of *Megaloblatta* can be ascertained.

1. **Megaloblatta rufipes,** Dohrn. (Tab. V. figg. 15–17.)

? *Blabera regina,* Saussure, Miss. Scient. Mex., Orthopt. p. 116. 10 (♂) (1870).

Megaloblatta rufipes, H. Dohrn, Stett. ent. Zeit. 1887, p. 409. 2 (♂).

♂. Tota nigra, pronoto et elytris leviter violaceo-nigris. Caput rotundatum, oculis invicem sat propinquis. Pronotum densissime punctulatum, disco nitidulo, minus dense et fortius punctato, lateribus rugulosis, postice carinulatum et in longitudinem striolatum. Mesonotum margine postico membranaceo; appendices membranacei meso- et metanoti graciles, elongati. Elytra immensa, fusco-nigra, subviolascentia. Alæ fulvo-fuscæ, margine anteriore et apicali obscuriore; campo anali pallidiore, nebuloso. Femora anteriora subtus in margine antico medio spinis 2–3, in margine postico spina præapicali armata; femora intermedia et posteriora subtus margine antico dimidia parte basali inermi; intermedia 4 : 3, posteriora 6 : 4, spinosa. Abdomen politum, utrinque maculis submarginalibus rufis. Segmentum penultimum angulis late rotundato-productis. Lamina supra-analis retro attenuata, rotundata, anguste incisa. Lamina infra-genitalis parva, rotundata, quam ultimum segmentum haud angustior. Segmentum 5^{m} basi rufescens. Cerci laminam supra-analem plus duplo superantes.

Long. 51; elytr. 73, pronot. 15·25, latit. pronot. 22 millim.

Larva, ♂ (fig. 17). Nigra, nitidissima, elliptica, deplanata. Thorax confertim punctulatus. Pronotum semiorbiculare, margine postico leviter arcuato, angulis lateralibus subrectangulis, acutis. Meso- et metanotum postice carinulata, processubus membranaceis nullis. Abdomen nitidum, subtiliter punctatum, segmentis 2°–4° utrinque macula lateritia; segmenta 5^{m}–7^{m} coriacea, vix punctata, plicato-corrugata: 4^{m} utrinque angulatum; 5^{m} magnum, marginibus lateralibus lamellaribus, valde reflexis, angulis leviter hebetatis; 6^{m} angulis acutis. Venter basi rufescens, utrinque depressione grandi rotundata. Lamina infra-genitalis apice subincisa. Caput et lamina supra-analis ut in imagine; cerci breviores.

Long. 44; pronot. 11·5, latit. pronot. 18 millim.

Hab. GUATEMALA, San Juan in Vera Paz (*Champion*); PANAMA (*coll. Brunner*).—COLOMBIA, Medellin; ? BRAZIL.

The specimen (♂) described by H. Dohrn has the abdominal segments rufous, with black margins, and the legs rufous, with the anterior femora armed with only one spine —placed on the inner (anterior) margin. Nevertheless I believe our individual from Guatemala belongs to the same species, the proportions being similar.

M. (*Blabera*) *regina*, Sauss. (from Brazil ?), may be inseparable from *M. rufipes*, Dohrn, to judge by its size.

M. peruviana, Dohrn (=*Blabera rufipennis*, Walk.), from the Upper Amazons, seems to be a smaller species, with more spined anterior femora, although this character is somewhat variable.

Tribus EPILAMPRINÆ.

Epilampridæ, Brunner de W. Syst. Blatt. p. 147.
Epilampriens, Saussure, Mélang. Orthopt. i. 2e fasc. p. 83.
Epilamprites, Saussure, Miss. Scient. Mex., Orthopt. p. 73.

Synopsis generum.

1. Elytra in utroque sexu perfecte explicata. Abdomen haud serratum.
   2. Pronotum et elytra sericeo-pilosa vel velutina. Antennæ incrassatæ, breviter hirsutæ. Pronotum transverse rhomboidale, margine posteriore quam anterior magis arcuato. Elytra elongata, apice valde attenuata. Alæ coloratæ, angustæ, campo posteriore sat parvo. Femora parum spinosa, subtus spina apicali magna ; tarsi brevissimi. Abdomen valde depressum, ♀ suborbiculare ; lamina supra-analis rotundata. Cerci breves, depressi, dilatati, obtusi.—PARATROPA, Serv.

22. Pronotum et elytra glabra. Antennæ setaceæ.
   3. Pronotum rhomboidale. Elytra parum longa, cornea, gibbosa, nitida, punctata, venis nullis, apice acuminata. Alæ campo anteriore angusto, apice truncato, venis costalibus numerosis. Pedes graciles, femoribus spinis rarioribus. Tarsi breves. Lamina supra-analis ♀ transversa. Cerci minuti, multiarticulati, acuminati.—PHORASPIS, Serv.

33. Elytra coriacea, venis distinctis. Pronotum posterius angulatum vel rotundatum.
   4. Alarum vena ulnaris ramos obliquos pennatos, regulares numerosos emittens. Elytra nonnunquam subcornea. Abdominis margines ♀ acute serrati. Lamina supra-analis prominula, bilobata, vel haud prominula, trapezina. Cerci breves. Lamina infra-genitalis ♂ rotundata, stylis longis instructa.
      5. Femora anteriora subtus in utroque margine spinosa.—EPILAMPRA, Burm.
      55. Femora anteriora subtus plerumque in margine postico inermia.—CALOLAMPRA, Sss., ♂.

44. Alarum vena ulnaris ramos furcatos irregulares emittens. Pronotum fere semiorbiculare, cucullatum, caput superans. Elytra lata, abdomen haud superantia. Abdomen acute serratum ; lamina supra-analis lata, subbilobata. Cerci minimi. —[HOMALOPTERX, Br.]

11. Elytra abbreviata, squamiformia vel nulla. Pronotum parabolicum, postice transversum.
    2. Caput prominulum. Femora anteriora subtus margine postico inermia. ♂ ♂ complete alati. Abdominis margines haud serrati. Lamina supra-analis ultra segmentum ventrale vix prominulum, transversa, arcuata, vel vix incisa.—CALOLAMPRA, Sss.
    22. Caput obtectum. Corpus depressum, ellipticum.
        3. Lamina supra-analis transversa, arcuata, subincisa, vix prominula. Corpus nitidum.
            4. Femora anteriora subtus margine antico piloso, postico spina unica. Elytra ♀ ♂ truncata. Corpus gracile; abdominis margines haud serrati. (*Ep. liturata* ♂, De Haan*.)—[COMPSOLAMPRA, Sss.†]
        44. Femora anteriora in utroque margine spinosa. Elytra squamiformia. Corpus late ellipticum, abdominis margines serrati.—[OPISTHOPLATIA, Br.]
    33. Lamina supra-analis prominula, trigonalis, incisa. Femora anteriora in utroque margine spinosa. Corpus rugulosum; pronotum cucullatum. Abdomen valde serratum. Elytra squamiformia vel nulla.—RHICNODA, Br.

PARATROPA, Serv.

Paratropes, Serville, Orthopt. p. 117; Saussure, Miss. Scient. Mex., Orthopt. p. 73.
Phoraspis, Burmeister, Handbuch, ii. p. 492.
Paratropa, Brunner de W. Syst. Blatt. p. 148.

Synopsis specierum.

a. Alæ aurantiæ, fusco-marginatæ.
  b. Pronotum anterius vitta flava, parallela vel in medio vix coarctata.—[*subsericea*, Sauss. (Guiana)]; [*elegans*, B. (Guiana)].
  bb. Pronotum anterius vitta flava in medio valde coarctata vel interrupta.
    c. Vitta haud interrupta.
      d. Pronoti margo posterior immaculatus.—1. *mexicana*, Br.; [*æquatorialis*, Sauss. (Peru)].
      dd. Pronoti margo posterior flavo-bimaculatus.—[2. *phalerata*, Er.]
    cc. Pronotum anterius flavo-bimaculatum.—3. *bilunata*, sp. n.
aa. Alæ totæ fuscæ. Pronotum ut in *P. mexicana* pictum.—4. *biolleyi*, sp. n.

1. **Paratropa mexicana**, Brunn.

Paratropes lycus, var. ♀, Sauss. Mém. Mex., Blatt. p. 60.
Paratropa mexicana, Brunn. de W. Syst. Blatt. p. 151. 2, fig. 15 (♀); Sauss. Miss. Scient. Mex., Orthopt. p. 73. 2.

Hab. MEXICO, Eastern Cordillera, Orizaba (*Mus. Genavense, ex coll. Guérin*).

[2. **Paratropa phalerata**, Erichs.

Blatta (*Nyctibora*) *phalerata*, Erichson, in Schomb. Fauna und Flora v. Britisch-Guiana, p. 580 (1848).

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* Nec ♀.—*Epil. quadrata*, Sauss. Mél. Orth. 4e fasc. p. 129, ♀ ♂.

† Sauss. Societas Entomologica, 1893, p. 58. Asiatic type mentioned here to fix the differences of *Calolampra*.

Paratropa phalerata, Brunner de W. Syst. Blatt. p. 152. 4 (1865).
Paratropes lycus, Sauss. Mém. Mex., Blatt. p. 59. 7, fig. 6 (♂) (1864).

Hab. GUIANA; BRAZIL.]

3. **Paratropa bilunata,** sp. n.

♀. Nigra; antennis nigris. Pronotum nigrum, utrinque in margine anteriore macula piriformi citrina. Elytra aurantio-rufida in longitudinem ut solitum fusco-trifasciata, margine costali, saltem basi, nonnunquam angustissime nigro; campo marginali in ima basi macula citrina. Alæ flavo-aurantiæ, campo anteriore apice et partim postice, irregulariter fusco-marginato; campo posteriore late fusco-limbato. Pedes nigri, spinis nigris. Abdomen supra latius, subtus angustius flavo-limbatum. Segmenta dorsalia 1^{m}–4^{m} margine angustissime flavo. Lamina supra-analis trigonali-rotundata, apice flava. Cerci fusci vel pallidiores. Segmentum ventrale ultimum limbo laterali et postico flavo, utrinque ad incisuram haud marginato.

Var. Elytris magis rufis.

Long. 16·6; elytr. 22, latit. elytr. 8·75, pronot. 5·4, latit. pronot. 9 millim.

Hab. PANAMA, Bugaba 800 to 1000 feet (*Champion*).

4. **Paratropa biolleyi,** sp. n.

♀. *P. bilunata* simillima, differt tamen ab illo pronoto anterius flavo-limbato, utrinque late, in medio angustissime (scilicet maculis pronoti in medio anguste conjunctis, disco nigro anterius trigonali, marginem anteriorem haud attingente). Alæ totæ nigræ. Abdomen supra anguste flavo-limbatum, subtus ut in *P. bilunata* luteo-marginatum.

♂. Lamina supra-analis trapezina, margine posteriore arcuato, parte apicali flava. Cerci subtus fusci, supra in medio flavi, basi et apice fusci.

♀. Long. 18; elytr. 20·5, pronot. 5·5, latit. pronot. 9·5 millim.

♂. Long. 17·5; elytr. 20, latit. elytr. 7·6, pronot. 4·6, lat. pronot. 8·2 millim.

Hab. COSTA RICA (*Biolley, in Mus. Genavense*: ♀); PANAMA, Bugaba (*Champion*: ♂).

PHORASPIS, Serville.

Phoraspis, Serville, Orthopt. p. 124.

Synopsis specierum.

a. Elytra vitta basali flava in vena humerali.
  b. Pronotum pellucenti-testaceum, disco basi macula fusca vel rufescente, vel disco medio et margine postico partim brunneo vel rufo.—1. *leucogramma,* Perty.
  bb. Pronotum castaneum, limbo anteriore anguste flavicante.—2. *mexicana,* Sss.
aa. Elytra immaculata; pronoto pellucenti-testaceo, macula fusca.—3. *bicolor,* sp. n.

1. **Phoraspis leucogramma,** Perty.

Phoraspis leucogramma, Perty, Delect. An. Artic. Bras. p. 116, t. 23. fig. 3 (1830), et auctt.; Brunn. de W. Syst. Blatt. p. 157. 2; Sauss. Miss. Scient. Mex., Orthopt. p. 75. 2.

Hab. MEXICO.—BRAZIL.

2. **Phoraspis mexicana,** Sauss.

Phoraspis mexicana, Sauss. Rev. et Mag. de Zool. 1862, p. 228; Mém. Mex., Blatt. p. 143. 73; Brunn. de W. Syst. Blatt. p. 159. 4; Sauss. Miss. Scient. Mex., Orthopt. p. 75. 3, t. 2. figg. 41–41 *a*.

Hab. MEXICO, temperate regions (*Saussure*).

3. **Phoraspis bicolor,** sp. n.

♀. Fusco-nigra, vertice, occipite et antennis brunneis. Pronotum pellucente-testaceum, sat grande, transverse convexum; margine anteriore subreflexo, valde arcuato, scilicet magis arcuato quam in reliquis speciebus (*atomaria*, *flavipes*), caput valde superans; margine posteriore triangulato, quam margo anterior haud arcuatiore; parte postica disci macula transverse quadrata fusca. Elytra brunnea, sulco anali nullo. Alæ infuscatæ. Pedes fusco-nigri.

Long. 16·5; elytr. 15·25, lat. elytr. 8·6, pronot. 6, latit. pronot. 9·6 millim.

Hab. CENTRAL AMERICA? (*Mus. Genavense*).

The elytra are almost chocolate in colour, and the pronotum is very transparent.

EPILAMPRA, Burm.

Epilampra, Burmeister, Handbuch, ii. p. 504; Brunner de W. Syst. Blatt. p. 166; Saussure, Miss. Scient. Mex., Orthopt. p. 80; Stål, Rech. sur le Syst. des Blattaires (Bihang ii. no. 13), p. 12.

*Pœciloderrhis**, Stål, Rech. sur le Syst. des Blattaires (Bihang ii. no. 13), p. 12.

Metatarsi postici subtus carinati, serrulati, tantum apice planta plana nuda minuta vel vix ulla †.

Synopsis specierum.

I.

a. Species majores.

b. Lamina supra-analis transversa, haud prominula.

c. Crassa, pronoto majore. Elytra ♀ abdomen vix superantia. Oculi invicem valde remoti.—1. *crassa*, Sss.

cc. Gracilior, pronoto minore. Elytra abdomen valde superantia. Oculi minus remoti.—[2. *imitatrix*, sp. n.]

bb. Lamina supra-analis prominula, incisa. Species graciles, elytris ♀ ♂ abdomen superantia.

c. Oculi invicem haud plus quam eorum latitudine remoti. Elytra ♀ abdomine valde longiora. Lamina supra-analis longe prominula, bilobata.

d. Oculis quam eorum latitudine minus remoti. Elytra conspersa. Alæ fusco-nebulosæ.—3. *mexicana*, Sss.

dd. Elytra nebulosa vel tenuissime rufo-tessellata. Alæ ferruginescentes.—5. *conspersa*, Burm., ♂.

cc. Oculi plus quam eorum latitudine remoti. Lamina supra-analis:

d. modice prominula, fissa. Abdomen luteo-marginatum.—[4. *fallax*, sp. n.]

dd. valde prominula, bilobata. Abdomen haud marginatum.—5. *conspersa*, Burm., ♀.

aa. Species minores. Vertex inter oculos:

b. quam oculorum latitudo paulo latior. Elytra et alæ longiora. Alæ apice area membra-

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* This genus cannot be maintained, the transitions connecting it with *Epilampra*. Besides, both types are to be found in the American and in the Oriental species.

† Stål has separated the Asiatic species which have the carina of the metatarsus without spinulæ:—metatarsi postici subtus rotundato-carinati, carina glabra haud serrulata. Genus *Molytria*, Stål.

nacea intercalata angusta instructæ; sinu anali obsoleto; campo anteriore angusto. Lamina supra-analis producta, incisa. Cerci apice anguste producti. Abdominis segmenta ♀ angulis acutis.

c. Pronoti discus fusco-marmoratus. Abdomen subtus fuscum, flavido-limbatum.—6. *azteca*, Sss.

cc. Pronotum totum subtiliter fusco-punctulatum.

d. Abdomen et pedes subtus subtiliter dense fusco-punctulata. Lamina supra-analis valde prominula. Alarum campus anterior angustissimus.—[7. *caraibea*, sp. n.]

dd. Major. Pedes haud dense fusco-punctulati; coxæ posticæ ♀ et venter utrinque granulosæ. Lamina supra-analis parum prominula. Alarum campus anterior latior.—[8. *burmeisteri*, Guér].

bb. quam oculorum latitudo fere duplo latior. Alæ campo anteriore latiore apice prominulo, incisura anali distincta, area intercalata nulla. Lamina supra-analis transversa, haud bilobata. Cerci apice obtusiores.—[9. *latifrons*, sp. n.]

II.

a. Penultima spina marginis antici femorum anticorum distincte quam ultima plus quam dimidio brevior vel illi paulo brevior. Pœciloderrhis, Stål.—1. *crassa*; [2. *imitatrix*]; 3. *mexicana*; [4. *fallax*]; 5. *conspersa*; 6. *azteca*; [7. *caraibea*]; [8. *burmeisteri*].

aa. Penultima spina marginis antici femorum anticorum minutissima. Epilampra, Stål *.—[9. *latifrons*.]

III.

a. Lamina supra-analis brevis, transversa, haud prominula, margine posteriore transverse arcuato. 1. *crassa*; [2. *imitatrix*]; [9. *latifrons*].

aa. Lamina supra-analis prominula, rotundata, incisa.—*reliquæ species*.

IV.

a. Campus analis elytri apice acutus.—3. *mexicana*; [4. *fallax*]; 6. *azteca*; [7. *caraibea*]; [8. *burmeisteri*]; [9. *latifrons*].

aa. Campus analis apice obtusior, vena analis fere perpendiculariter vel sub angulo parum acuto in margine suturali incidente.—1. *crassa*; [2. *imitatrix*]; 5. *conspersa*.

1. **Epilampra crassa,** Sauss. (Tab. IV. fig. 37.)

Epilampra crassa, Sauss. Rev. et Mag. de Zool. 1868, p. 99. 11 (♀); Miss. Scient. Mex., Orthopt. p. 80. 3.

♀. Flavo-fulva vel rufescens; crassa. Caput prominulum, facie media et fronte inter oculos fuscis. Oculi invicem quam ocelli magis remoti; vertex inter illos quam eorum latitudo fere duplo latior. Pronotum sparse nigro-punctulatum; pictura discoidali marmorata, obsoleta, fusca; marginibus lateralibus valde deflexis. Elytra abdomen vix superantia, ubique remote fusco-rufo-punctulata, campo discoidali maculis minutis 5–6 remotis. Alæ leviter fusco-nebulosæ, campo anteriore fulvescente, in area ulnari ultra medium maculis minutis 3–4 obscurioribus obsoletissimis. Hic latus, campum posteriorem vix superans,

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* This section is not an Oriental one only, as Stål supposed; it occurs also in America.

apice late rotundatus præsertim anterius; margo anterior ad apicem valde retro-arcuatus, cum margine apicali rotundatus. Incisura analis obsoleta, late sinuata. Inter campum anticum et posticum area apicalis membranacea minuta intercalata. Pedes testacei, tibiis et tarsis rufescentibus. Abdomen fuscum, supra segmentorum margine plus minus rufescente, subtus nigrum. Segmentorum anguli haud sensim producti, nec spinosi, nec acuti, segmentum 7^{m} ultra 6^{m} in medio late prominulum, arcuatum, angulis extus ad basin cercorum oblique valde prominulis, rotundatis. Lamina supra-analis transversa, cornea, truncata, utrinque rotundata, a segmento ventrali leviter superata.

Long. 30·5; elytr. 26, pronot. 9, latit. pronot. 11·25 millim.

Hab. Mexico, Eastern Cordillera (*Mus. Genavense*).

[2. **Epilampra imitatrix,** sp. n.

♂. Fulvo-testacea, *E. fallaci* ♂ valde major. Oculi quam ocelli magis remoti. Vertex inter illos eorum latitudine sesqui-latior, crassiuscule fusco-punctatus vel fusco-varius. Facies inter antennas, frons inter oculos occiputque fusca. Pronotum sparse fusco-punctatum, maculis majoribus intermixtis, marginibus vix punctatis. Elytra abdomen magis superantia punctis minimis fuscis conspersa; apice immaculata. Alæ hyalino-sordidæ; campo anteriore latiusculo; apice rotundato, campum posteriorem distinctius superante; margine costali nec albescente nec coriaceo. Pedes testacei, femorum marginibus brunneis, spinis fusco-rufis. Lamina supra-analis brevis, transversa, carinulata, margine posteriore transverse subarcuato, integro, ab infra-genitali superato. Cerci fusci, apice parum acuti.

Long. 26·5; elytr. 31, pronot. 7·75, latit. pronot. 10·25 millim.

Hab. Brazil (*Mus. Genavense*).]

3. **Epilampra mexicana,** Sauss.

Epilampra mexicana, Sauss. Rev. et Mag. de Zool. 1862, p. 228; Mém. Mex., Blatt. p. 130. 64, fig. 26 (♂); Miss. Scient. Mex., Orthopt. p. 80. 2.

♀. Fulva. Caput minutum, prominulum. Oculi invicem ut ocelli modice remoti; vertex inter illos latitudinem oculorum haud æquans. Frons inter antennas et vertex inter oculos fusci. Pronotum minutum, posterius bisinuatum, marginibus lateralibus valde deflexis; omnino subtiliter dense fusco-punctulatum, marginibus punctis majoribus nigris ornatis; lobis deflexis punctis similibus conspersis. Discus punctis 2 subimpressis, plus minus fusco-umbratus, pictura lyrata obsoletissima vel nulla. Elytra elongata, abdomen longe superantia, margine costali ultra medium longe subsinuato; omnino dense fusco-rufo-punctulata vel tessellato-conspersa, in vena principali serie macularum fuscarum notata. Alæ fusco-nebulosæ, venis campi anterioris fulvis, margine anteriore et apice fulvo-coloratis, costa apice fusco-rufo-punctata. Campus anterior modice latus, posteriorem vix superans, apice subangulatus, margine anteriore arcuato, apicali fere oblique truncato. Area membranacea intercalata minuta distincta; incisura analis obsoleta, late sinuata. Pedes corporis colore; coxæ, saltem posticæ, sparse granulosæ; femorum anticorum spina præapicalis marginis antici quam ultima dimidia minor. Abdomen flavo-fulvum; segmentorum angulis acute spinosis; subtus subtiliter dense brunneo-punctatum, ad marginem segmentorum punctis nigris majoribus ornatum. Ultimum segmentum ventrale maculis 2 nigris, apice productum, latiuscule truncato-rotundatum. Lamina supra-analis valde producta, rotundata, incisa, bilobata; cerci illam haud superantia, apice nigro.

♂. Feminæ simillimus, frequenter pallidior. Elytra fulva, punctulata ac punctis majoribus brunneis remote conspersa. Alarum campus anterior posteriorem distincte superans, apice rotundatus.

♀. Long. 32; elytr. 33, pronot. 7·6, latit. pronot. 9 millim.

♂. Long. 24; elytr. 25, pronot. 5·8, latit. pronot. 8 millim.

Hab. Mexico (*Saussure*); Guatemala, Zapote (*Champion*).

[4. **Epilampra fallax,** sp. n. (Tab. IV. fig. 36.)

♀. Gracilis, *E. mexicanæ* affinis, fulvo-testacea vel flavo-lutea. Caput minutum, fronte et occipite variabiliter fusco-picturatis. Oculi invicem *magis remoti*, vertex inter illos quam eorum latitudo latior. Pronotum fornicatum, ubique subtilissime fusco-punctulatum, punctis nigris majoribus utrinque et in marginibus conspersum; marginibus lateralibus subtus anguste fuscis, saltem anterius; disci pictura lyrata fusco-marmorata plus minus distincta vel tantum fusco-punctata vel maculosa. Elytra sat pallida, abdomen haud longe superantia, margine costali ultra medium recto; omnino sparse fusco- vel rufo-punctulata, vel irrorata; serie punctorum in vena principali notata nonnullisque in parte apicali; basi vena discoidali et intus ad venam analem, nigra; campo marginali pallidiore vel tantum linea humerali lutescente. Alæ subhyalinæ. Campus anterior modice latus, apice rotundatus, posteriorem leviter superans. Campi marginalis venæ partim inquinatæ; margo anterior ultra medium luteo-opacus, apice fusco-punctatus. Campus posterior venis fuscescentibus. Pedes testacei, punctis raris fuscis; coxis ad margines frequenter fusco-maculosis; tibiis et femoribus ad spinas frequenter fusco-punctatis; tarsorum articulis supra apice fuscis. Spinæ femorum anticorum ut in *E. mexicana*. Abdomen supra plus minus fuscum, testaceo-limbatum, segmentorum angulis acutissimis nec tamen sensim productis, nec spinosis; 7° segmento tota latitudine prominulo, angulis paulo retro-productis, rotundatis. Lamina supra-analis producta, rotundata, fissa, basi nigra. Subtus abdomen testaceum, nigro-punctulatum seriebusque transversis punctorum majorum; segmentis utrinque fusco-maculosis. Ultimum segmentum ventrale margine inter cercos arcuato, basi nigro-bimaculatum, maculis nonnunquam retro-productis, variabilibus. Cerci apice minute nigri.

Var. *a*. Pallida, elytris sparse punctatis.—*b*. Lamina supra-analis incisa, rotundato-bilobata.—*c*. Lamina supra-analis vix vel haud incisa.—*d*. Ultimum segmentum ventrale inter cercos magis productum, valde arcuatum; lamina supra-anali itaque minus prominula.

♂. Oculi invicem minus remoti; vertex inter illos eorum latitudine paulo angustior. Abdomen subtus frequenter pallidum, lamina supra-analis basi granulata, incisa, rotundato-bilobata.

♀. Long. 32; elytr. 28, pronot. 7·75, latit. pronot. 9·25 millim.

♂. Long. 26; elytr. 25, pronot. 6, latit. pronot. 7 millim.

Hab. Brazil, St. Catharina (*H. Fruhstorfer, in Mus. Genavense*).

This species, like *E. imitatrix*, has been described to prevent confusion with *E. mexicana*.]

5. **Epilampra conspersa,** Burm. (Tab. IV. fig. 38.)

Epilampra conspersa, Burm. Handb. ii. p. 505; Brunner de W. Syst. Blatt. p. 190. 26.

♀. Griseo-fulvescens, *E. fallaci* formis affinis, at gracilior. Caput haud fusco-pictum; oculi invicem quam ocelli magis remoti, vertice eorum latitudine plus quam sesqui-latiore. Pronotum sat minutum, utrinque deflexum, unicolor, disco haud fusco-vario. Caput totum ore excepto et pronotum omnino densissime, subtilissime fusco- vel brunneo-punctulata. Elytra abdomen superantia, leviter obsoletissime griseo-undato-nebulosa (in modo *E. nebulosæ* et *E. jaspideæ*), maculis leviter pallidioribus obsoletis conspersa. Campi discoidalis dimidia pars basalis et campus analis totus coriacei, per transluciditatem inter venas minute dupliciter punctato-areolati, areolis vel circuitu areolarum rufis. Pars obtecta elytri dextri magna parte rufa, pallide maculosa vel marmorata. Alæ campo anteriore sat angusto, ferrugineo; campo posteriore nebuloso, venis ferrugineis. Campus anterior ad costam ultra medium rufo-fuscus, subopacus, subtus pallidior; apice ad marginem rufo-fuscus. Margo costalis apice modice arcuatus; apex campi rotundatus, campum posteriorem haud superans. Margo apicalis alæ vix sinuatus; aream membranaceam intercalatam distinctam obferens. Pedes testaceo-rufescentes. Abdomen flavo-rufum vel infuscatum; marginibus segmentorum dorsalium pallidioribus. Anguli segmentorum acutissime producti. Lamina supra-analis valde producta, cercos superans, profunde incisa, rotundato-bilobata. Cerci apice minute nigri. Ultimum segmentum ventrale inter cercos utrinque angulatim fere excisum, in medio productum, late rotundatum.

♂. Alarum campus anterior campum posteriorem leviter superans. Lamina supra-analis minus producta, parum incisa, a cercis superata. Vertex inter oculos eorum latitudine æqualis.
♀. Long. 31; elytr. 26·5, pronot. 6·75, latit. pronot. 8·5 millim.

Hab. GUATEMALA, Vera Paz (*Champion*).—GUIANA, Cayenne.

This species has the pronotum very finely punctured with brown, as in *E. caraibea*. *E. caraibea*, however, is much smaller than *E. conspersa*, and the head is not densely punctured with brown in the same way.

Var. ? ♂. Antennæ, caput, pedes et cerci nigra (anne fortuito ?). Elytra tenuissime rufo-tessellata, fere ut in *E. caraibea*, sed obsoletius. Long. 23; elytr. 25, pronot. 5·75, latit. pronot. 8 millim.

Hab. PANAMA, near the city (*Champion*).

It is somewhat doubtful whether this variety (♂) belongs to *E. conspersa*, the eyes being less distant, and the elytra having a different sort of fine maculation. Its black head and legs may be the result of discoloration in the dried specimens.

6. **Epilampra azteca,** Sauss.

Epilampra azteca, Sauss. Rev. et Mag. de Zool. 1868, p. 356. 12 (♂); Miss. Scient. Mex., Orthopt. p. 82. 5, t. 2. fig. 45 (pars).

♀. Flavo-testacea, facie punctis 2 vel 4 et linea media fuscis. Frons cum pictura frequenter lineas 2 ad occipitem emittente necnon maculis 2 ad oculos, fuscis. Oculi quam ocelli æque remoti. Pronotum paulo latius ac brevius quam in *E. caraibea* et *E. latifronte*; postice bisinuatum, utrinque grosse sparse fusco-punctatum; disco pictura magna marmorata fusca, distinctissima, haud fusco-punctulata, notato. Elytra fulvescentia, omnino crasse, remote, fusco-punctata; linea in vena humerali elongata fusca ad basin evanida, maculaque basali campi analis ad venam analem fusca. Alæ leviter infuscatæ, margine costali fulvescente. Campus anterior angustus, apice leviter truncatus vel rotundatus, campum posticum vix superans. Incisura apicalis inter campos nulla; apex alæ inter campum anticum et posticum aream membranaceam intercalatam angustam præbens. Abdomen supra testaceo-flavum, segmentis posterioribus utrinque castaneo-umbratis, angulis leviter prominulis, subacutis, 7° segmento leviter prominulo, angulis leviter productis, rotundatis. Venter castaneus, limbo et basi luteis, sparse fusco-punctatis. Lamina supra-analis ♀ longiuscula, paulum prominula, retro attenuata, rotundata, leviter incisa, bilobata, basi fusca. Ultimum segmentum ventrale inter cercos productum, margine valde arcuato, subtruncato. Cerci modice longi, testacei, laminam supra-analem haud longe superantes, apice anguste attenuato, haud nigro.
Long. 18; elytr. 17·5, pronot. 4·25, latit. pronot. 6·5 millim.

Hab. MEXICO, Eastern Cordillera (*Saussure*), Teapa in Tabasco (*H. H. Smith*).

Saussure formerly included specimens from Cuba and others from South America under *E. azteca*; these are here separated under the names *E. caraibea* and *E. latifrons* respectively.

[7. **Epilampra caraibea,** sp. n.

E. aztecæ simillima, at minus fusco-picturata. Caput ubique sparse fusco-punctatum, fronte infra antennas vitta angusta transversa flavida; vertice inter oculos nigro, saltem pictura nigra. Caput superne flavidum, occipite fusco-binotato. Pronotum omnino subtilissime fusco-punctulatum, in disco densissime, utrinque sparsius, necnon ad margines laterales punctis majoribus fuscis; pictura lyrata fusca nulla.

Elytra linea humerali basali nigra brevi; campo marginali pallescente, irregulariter fusco-rufo punctulato; campo discoidali et anali minute irregulariter fusco-rufo-irrorato, subtessellato; necnon in vena principali plus minus fusco-maculosa. Alarum campus anterior apice paulo magis acutus, campum posticum leviter superans. Abdomen angulis segmentorum ultimorum acutis, segmento 7° leviter prominulo, angulis leviter productis, rotundatis; supra pallide piceum, marginibus pallidis, subtus testaceo-fulvum, omnino subtiliter fusco-punctulatum, maculis stigmatalibus nonnunquam minutis fuscis. Pedes ut abdomen omnino fusco-punctulati, femoribus supra fusco-marginatis, tibiis ad exsertionem spinarum fusco-maculosis, spinis testaceis; tarsorum articulis supra apice fuscis.—♂ abdominis segmenta angulis rotundatis, nullomodo angulatis; ♂ ♀ lamina supra-analis distincte prominula, rotundata, apice attenuata, incisa. Ultimum segmentum ventrale ♀ in medio parum fortiter arcuatum.

♀. Long. 18; elytr. 17, pronot. 5, latit. pronot. 6 millim.

Hab. Antilles, Cuba (*Mus. Genavense*).]

[8. **Epilampra burmeisteri,** Guér.

Phyllodromia burmeisteri, Guér. Ins. de Cuba (Ramon de la Sagra), p. 345; Sauss. Mém. Mex., Blatt. p. 131. 65, fig. 25.

Epilampra burmeisteri, Sauss. Miss. Scient. Mex., Orthopt. p. 81. 4.

♀. *E. caraibeæ* simillima at major. Capite et pronoto illæ speciei pictura simillimis, marginibus tamen lateralibus pronoti punctis majoribus raris ac minoribus. Elytra haud dense fusco-irrorata, omnino remote fusco-punctulata; campo discoidali ultra medium punctis 3–4 majoribus, alteroque campi analis, necnon linea brevi nigra in vena mediastina, maculaque ad basin venæ analis (ut in *E. latifronte*) ornata. Alæ apice late subsinuatæ. Pedes testacei; coxæ in medio remote fusco-punctatæ; femora lineis fuscis marginata, punctis fuscis raris notata; tibiæ ad spinas fusco-maculatæ; articuli tarsorum apice fusci. Abdomen frequenter infuscatum, subtus et supra subtiliter dense fusco-punctulatum, segmentorum angulis subacutis. Lamina supra-analis parum prominula, rotundata, leviter incisa; cercis apice fuscis.

Var. *a.* Tota pallide fulva, vertice inter oculos nigro; pronoto haud fusco-punctulato, tantum in marginibus punctis remotis consperso, disco maculis minutis nonnullis nigris. Pedes et abdomen testacea, hoc subtus haud vel sparse fusco-punctulatum.—*b.* Elytrorum linea nigra basali nulla.

♂. Oculi quam in ♀ invicem haud propiores; coxæ parum vel haud granulosæ; lamina infra-genitalis macula media fusca.

♀. Long. 22·5; elytr. 22·5, pronot. 6·5, latit. pronot. 7·8 millim.

Hab. Antilles, Cuba (*Mus. Genavense*).

All our males are of a pale colour, as in the variety *a*.]

[9. **Epilampra latifrons,** sp. n.

♂. Fulvo-testacea, *E. aztecæ* et *E. caraibeæ* simillima. Oculi quam in illis sensim magis remoti, quam ocelli flavi magis distantes. Caput flavidum, inter ocellos et inter oculos macula magna nigra ornata. Pronotum utrinque maculis minutis fuscis punctatum, disco fusco-picturato et punctulato. Elytra et alæ quam in speciebus laudatis paulo breviora; elytra apice paulo latiora vitta humerali nigra brevi, omnino maculis fusco-rufis remotis conspersa. Alarum campus anterior latior, apice rotundatus, campum posteriorem distincte superans, incisura anali inter campos distincta; area intercalata membranacea inter illas nulla. Pedes testacei, immaculati, spinis et apice tarsorum rufidis. Abdomen superne piceo-infuscatum, marginibus pallidis; subtus flavo-testaceum, immaculatum. Segmentorum anguli vix producti, rotundati (♂), 6^{m} subacutum. Lamina supra-analis ♂ haud prominula, coriacea, basi fusca, margine postico transverse arcuato, integro. Cerci testacei, quam in speciebus laudatis sensim breviores, apice nec anguste producto, nec nigro (ut in *E. azteca*).

Long. 14·5; elytr. 14·5, pronot. 4·75, latit. pronot. 6 millim.

Hab. South America (*Mus. Genavense, ex coll. Guérin*).

In this species the marking of the pronotum is intermediate between that of *E. azteca* and that of *E. caraibea*; the markings of the elytra are also intermediate, being more finely and less irregularly punctured than in *E. azteca*, but more irregularly than iu *E. caraibea*; the colour of the abdomen on the upperside is like that of *E. caraibea*.]

CALOLAMPRA, Sauss.

Calolampra, Saussure, Societas Entomologica, 1893, p. 58.

Generi *Epilampræ* simillimum; differt tamen feminis apteris vel elytris valde abbreviatis squamiformibus; marium elytris complete explicatis vel atrophicis. Femora anteriora subtus margine postico inermi, tantum spina apicali instructo, margine antico inermi vel basi spinoso, apice spinis 1 vel 2 majoribus.

Synopsis specierum.

a. Femora anteriora spinosa. Elytra ♀ rudimentalia vel nulla.

b. Femora subtus margine postico inermi; femora anteriora margine antico basi spinis normalibus, apice spinulis minimis piliformibus instructo. (Blattinæ, Type 2, *Platamodes*, anteà p. 30). Elytra ♀ rudimentalia, ♂ completa. Tarsi graciles, metatarso postico quam reliqui articuli computati haud breviore.—[*gracilis*, Br. (Australia)]; [*heusseriana* *, Sss.].

bb. Femora 2ª, 3ª subtus in utroque margine spinosa. Tarsi breves, crassiusculi. Feminæ apteræ. Mares?—1. *brevitarsis*, Sss.

aa. Femora anteriora in utroque margine mutica; posteriora saltem in margine postico rare spinosa. Elytra marium completa.—2. *bispinosa*, Sss.

1. **Calolampra brevitarsis**, Sauss. (Tab. IV. fig. 39.)

Calolampra brevitarsis, Sauss. Societas Entomologica, 1893, p. 58.

♀. Gracilis, depressa, fusco-nigra, nitida. Caput prominulum, vertice rotundato, ore et ocellis testaceis. Antennæ crassiusculæ, fusco-testaceæ. Pronotum corneum, parabolicum, antice truncatum, margine posteriore parum arcuato. Mesonotum et metanotum angulis posticis nullomodo productis; marginibus lateralibus mesonoti arcuatis. Thorax coriaceo-punctulatus. Pedes fusco-testacei, sat robusti. Femora anteriora subtus margine antico piloso-spinuloso, ad basin spina 1, apice 2. Femora intermedia et posteriora remote spinosa, spinis marginis antici brevibus. Tarsi breves ac crassi, plantis crassis; metatarsus posticus brevis, articulis 3 sequentibus vix æquilongus, articulo 2° brevi, subtus basi haud carinato. Abdomen vix dilatatum. Lamina supra-analis cornea, rotundato-trapezina, minute trigonali-incisa. Cerci conici, testacei. Ultimum segmentum ventrale subconvexum, inter cercos rotundatum.

Long. 14·5; pronot. 4, latit. pronot. 5 millim.

Hab. Panama (*Mus. Genavense*).

2. **Calolampra bispinosa**, Sauss. (Tab. III. fig. 26.)

Calolampra bispinosa, Sauss. Societas Entomologica, 1893, p. 58.

♀. Gracilis, rufo-testacea. Caput prominulum, crassiuscule punctatum, ocellis, ore et antennis testaceis. Pronotum corneum, nitidum, fusco-castaneum, crasse punctatum, lateribus deflexis, marginibus lateralibus

* In this species the anterior femora, ♂, are armed as in *Epilampra*. The ♀ has also occasionally one spine on the posterior margin of the anterior femora. It makes a transition to the true *Epilampra*.

testaceis, margine posteriore parum arcuato, valde obtusangulo vel rotundato. Elytra angusta, abdomen paulum superantia, testaceo-hyalina, macula basali grandi campi analis rufo-castanea. Alæ subhyalinæ, venis testaceis, margine medio costali albicante; vena ulnari ramos 3 ad marginem apicalem emittente. Pedes testacei, crassiusculi. Femora subtus spinis apicalibus minimis; femora anteriora subtus margine antico dense piloso-pectinato; femora intermedia et posteriora margine inferiore postico ante medium spinis 2 remotis armato. Tarsi sat breves, metatarso postico reliquis articulis computatis paulo breviore. Abdomen infuscatum, basi pallidum, marginibus lateralibus luteis. Lamina supra-analis testacea, transversa, margine posteriore transverse arcuato, laminæ infra-genitali æquilonga; hæc margine posteriore obtusangulo, luteo-limbato, angulo rotundato. Cerci acutiusculi, laminam supra-analem superantes.

Long. 21; elytr. 18·5, pronot. 5·25, latit. pronot. 6·8 millim.

Hab. Panama (*Mus. Genavense*).

This species makes a sort of transition to the Panchlorinæ, the femora being very sparsely spinose, and the pronotum being intermediate in form between that of *Panchlora* and that of *Nauphœta*.

[OPISTHOPLATIA, Brunner de W.

Opisthoplatia, Brunner de W., Syst. des Blatt. p. 198.

1. **Opisthoplatia orientalis,** Burm.

Polyzosteria orientalis, Burm. Handb. ii. p. 482. 1; Saussure, Mém. Mex., Blatt. p. 54. 3; Stoll, Kakkerl. t. 5 *d.* fig. 25.

Opisthoplatia orientalis, Brunn. de W., Syst. Blatt. p. 199. 1; Saussure, Miss. Scient. Mex., Orthopt. p. 85. 1.

Hab. India, in America transducta.]

RHICNODA, Brunn. de W.

Rhicnoda, Brunner de W., Rev. du Syst. des Orthopt. p. 30 (1893).

A very peculiar genus, remarkable on account of the shape of the body and its produced triangular supra-anal plate.

Synopsis specierum.

a. Pronoti margo anterior reflexus. Femora anteriora spinis 3–4 armata, reliqua subtus inermia. Arolia inter ungues perdistincta.—1. *reflexa,* sp. n.

aa. Pronoti margo anterior haud vel vix reflexus.

b. Femora omnia subtus spinosa. Arolia inter ungues nulla (Asiaticæ).—*rugosa, spinulosa,* Br.

bb. Femora? Arolia? (Americanæ.)—[2. *laminata,* Br.]

1. **Rhicnoda reflexa,** sp. n. (Tab. IV. fig. 35.)

♂. Brunneo-ochracea, subtus ochraceo-testacea; tota granulata, aptera, deplanata. Antennæ breves. Thorax valde carinatus. Pronotum rotundato-trigonale, utrinque granulatum, posterius tuberculis majoribus nitidis instructo; margine anteriore valde reflexo, disco convexo, subtrilobato. Meso- et metanotum squamoso-granulosa vel punctata, margine posteriore tuberculoso; angulis retro productis, apice rotundatis.

Abdomen punctatum, segmentorum margine eodem modo granuloso-tuberculoso ut in thorace, angulis retro productis. Lamina supra-analis trigonalis, carinata, marginibus reflexis, apice trigonali-incisa, bilobata. Cerci brevissimi.

Long. 21·8; pronot. 6·4, latit. pronot. 10·5, mesonoti 13 millim.

Hab. NICARAGUA, Chontales (*Janson*).

This insect may prove to be a larval form, although no lateral sulci are indicated on the meso- and metanotum.

[2. **Rhicnoda laminata,** Brunner de W.

Homalopteryx laminata, Brunn. de W. P. Z. S. 1892, p. 204, t. 15. fig. 4 (♂ ♀).

Hab. ANTILLES, St. Vincent.]

Tribus PERIPLANETINÆ.

Periplanetidæ, Brunner de W. Syst. Blatt. p. 202.

Periplanetiens, Saussure, Mélang. Orth. i. 2e fasc. p. 75.

Periplanétites, Saussure, Miss. Scient. Mex., Orthopt. p. 70.

Abdominis 4m segmentum dorsale margine postico transverso, recto (in *G. deropelti,* ♀, undato).

Synopsis generum *.

1. Cerci laminam supra-analem superantes. Tibiæ supra triseriatim spinosæ. Lamina supra-analis ♀ trigonalis, incisa vel truncata; vel rotundata, bilobata; ♂ variabilis, frequenter transverse quadrata, late obtusangulatim subincisa. Elytra in utroque sexu completa vel abbreviata, squamiformia vel nulla.—(Stirps PERIPLANETA.)
   2. Tarsi postici crassiusculi, parum elongati, plantis magnis, saltem in articulis 2°–4°. Metatarsus articulis 3 sequentibus computatis æquilongus vel parum longior. Arolia inter ungues majuscula. Oculi invicem valde remoti, in vertice quam scrobæ antennarum magis vel æqualiter distantes. Elytra abbreviata, vel squamiformia vel nulla.
      3. Cerci breves, laminam supra-analem vix superantes. Elytra cornea, valde abbreviata vel squamiformia. Alæ squamiformes vel nullæ.—EURYCOTIS, Stål.
      33. Cerci elongati, laminam supra-analem sensim superantes. Elytra et alæ abdomen haud superantia. Elytra coriacea; alarum campus posticus ramoso-venosus, in requiete haud plicatus.—PELMATOSILPHA, Dohrn.
   22. Tarsi postici graciles, elongati, plantis minutis; illa 2i articuli dimidiam partem basalem marginis inferi liberans. Metatarsus reliquis articulis computatis æquilongus vel longior, compressus, subtus valde spinulosus. Arolia inter ungues parva. Cerci longi.
3. Oculi invicem remoti.
   4. Planta articuli 2i tarsorum posticorum partem dimidiam articuli occupans. Abdomen serratum, angulis segmentorum retro acutis. Elytra abbreviata vel squamiformia. —DORYLÆA, St.

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* The genus *Platyzosteria*, Brunn. de W., is an Australian and Indian type, and has for synonym the genus *Melanozosteria*, Stål, which name must be suppressed.

44. Planta articuli 2[i] tarsorum posticorum parva. Abdomen in maribus haud serratum. Elytra feminarum abbreviata vel nulla.—STYLOPYGA, Fisch.

33. Oculi invicem parum remoti, quam scrobi antennarum minus distantes. Plantæ tarsorum posticorum minutissimæ. Elytra et alæ condite explicatæ. Pronotum subconvexum antice attenuatum, plus minus biimpressum.—PERIPLANETA, B.

11. Cerci laminam supra-analem haud superantes. Tibiæ supra 2- vel 3-seriatim spinosæ. Lamina supra-analis transverse quadrata, ♀ plus minus rotundata. Cerci breves. Feminæ apteræ. Mares complete alati; elytris sat angustis ultra medium dilatatis, campo marginali angusto. (Genera mundi antiqui.)—Stirps DEROPELTIS, B.

2. Tibiæ biseriatim spinosæ.—PSEUDODEROPELTIS, Krauss.

22. Tibiæ triseriatim spinosæ.—DEROPELTIS, B.

EURYCOTIS, Stål.

Eurycotis, Stål, Rech. sur le Syst. des Blattaires (Sv. Ak. Handl., Bihang, ii. p. 13 (1874).
Platyzosteria *, Brunner de Wattenwyl (ex parte), Syst. Blatt. p. 204.

Synopsis specierum.

a. Elytra lateralia, squamiformia.
  b. Alæ nullæ.
    c. Corpus totum nigrum vel castaneum.
      d. Vertex haud vittatus. Pedes castanei vel rufescentes.—1. *mexicana*, Sss.
      dd. Vitta frontalis et pedes testacei.—2. *vittifrons*, sp. n.
    cc. Corpus flavo-varium.
      d. Pronoto utrinque rufo-vittato.—3. *mysteca*, Sss.
      dd. Elytris flavis.—[4. *flavipennis*, sp. n.]
  bb. Elytra et alæ squamiformia.—5. *quadrisquamata*, sp. n.
aa. Elytra sese intus tangentia, cornea, brevissima, transverse truncata:
  b. metanotum liberantia:
    c. Tota nigra.—[6. *opaca*, Brunn.]
    cc. Thorace lateraliter flavo-vittato.—[7. *finschiana*, Sss.]
  bb. metanotum tegentia.—[8. *subalata*, sp. n.]; [9. *occidentalis*, Sss.].

1. **Eurycotis mexicana**, Sauss.

Polyzosteria mexicana, Sauss. Rev. et Mag. de Zool. 1862, p. 163 (larva); Mém. Mex., Blatt. p. 54. 4 (♀ ♂) (nympha); Brunn. de W. Syst. Blatt. p. 216. 16; Sauss. Miss. Scient. Mex., Orthopt. p. 70. 1, t. 2. figg. 39, 39 *a*.
Polyzosteria azteca, Sauss. Mém. Mex., Blatt. p. 55. 5 (larva, ♂).

Tota nigra, maculis ocellaribus minutis. Antennæ rufescentes, basi nigræ. Corpus deplanatum. Elytra squamiformia, mesonotum parum superantia. Alæ nullæ. Spinæ tibiarum rufescentes. Lamina

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* *Platyzosteria* must be retained for the subgenus to which Stål has given the name *Melanozosteria*.

supra-analis ♀ longiuscula, rotundato-emarginata, rotundato-bilobata ; ♂ brevior trapezina, obtusissime subincisa, angulis rotundatis.

♀. Long. 21·5, ♂ 18·25 millim.

Hab. Mexico, Eastern Cordillera, Orizaba, and Moyoapan (*Sumichrast*), Puebla (*Saussure*), valley of the city of Mexico (*Forrer*).

2. **Eurycotis vittifrons,** sp. n.

♀. Nigra, *E. mexicanæ* formis simillima. Caput pallide testaceum, macula grandi faciei verticeque inter oculos, nigris, necnon vitta frontis supra antennas arcuata flavida. Antennæ rufo-fuscæ, basi ultra 3^m^ articulum fusca. Elytra rotundato-squamiformia, quam in specie laudata latiora, apice latius rotundata. Pedes testacei vel rufescentes. Lamina supra-analis sat elongata, obtusangulatim incisa, angulis rotundatis. Cerci laminam supra-analem parum superantes, apice subito anguste attenuati ac rufi.

Long. 8·5 ; elytr. 2·25, pronot. 5·75, latit. pronot. 7·5 millim.

Hab. Guatemala (*Oltramare, Mus. Genavense*).

3. **Eurycotis mysteca,** Sauss.

Periplaneta mysteca, Sauss. Rev. et Mag. de Zool. 1862, p. 170 ; Mém. Mex., Blatt. p. 77. 21.

Polyzosteria mysteca, Sauss. Miss. Scient. Mex., Orthopt. p. 71. 2, t. 2. fig. 40.

Platyzosteria rufo-vittata, Brunn. de W. Syst. Blatt. p. 215. 15.

♀. Nigra, convexiuscula ; antennis ferruginescentibus, basi nigris. Maculæ ocellares minutæ. Pronotum utrinque vitta submarginali aurantiaca vel rufa postice dilatata, rotundata, marginem posticum liberante. Elytra squamiformia, mesonotum leviter superantia, apice rotundata. Alæ nullæ. Spinæ tibiarum rufescentes. Lamina supra-analis ♀ illi *E. mexicanæ* conformis.

Long. 20·5 millim.

Hab. Mexico, Oaxaca (*Saussure*).

[4. **Eurycotis flavipennis,** sp. n.

♀. Nigra, nitida, *E. mexicanæ* formis simillima at paulo major. Antennæ ferrugineæ, basi testaceæ. Caput nigrum, ocellis et ore testaceis. Elytra anguste squamiformia ut in specie laudata, ochracea, marginibus omnibus anguste nigris. Pedes compressi, latiusculi, castanei, coxis testaceis, fusco-umbratis. Femora rufescentia, apice et marginibus subtus fuscis ; posteriora subdilatata, apice leviter attenuata, faciebus binis planatis, subexcavatis punctatisque. Lamina supra-analis apice obtusangulatim incisa. Cerci nigri, parum acuti, regulariter acuminati ut in *E. mysteca*.

Long. 20·5 ; elytr. 3, pronot. 6, latit. pronot. 8 millim.

Hab. Cuba (*Poey, Mus. Genavense*).]

5. **Eurycotis quadri-squamata,** sp. n. (Tab. IV. fig. 40.)

♀. Fusco-castanea (vel nigra), nitida, coriacea. Antennæ ferruginescentes, basi castaneæ. Caput remote punctatum, maculis ocellaribus 2 flavis, vertice prominulo. Pronotum parabolicum, sat convexum, antice truncatum, postice transversum in medio brevissime subproductum. Elytra et alæ squamiformia, mesonotum et metanotum quarta vel quinta parte superantia, margine externo subrecto, interno arcuato. Elytra punctata, apice ad marginem acuminata ; alæ apice potius truncatæ vel intus rotundatæ. Lamina supra-analis, fere ut in *E. mexicana,* quam longa basi duplo latior, margine postico obtusangulatim inciso, angulis haud acutis. Cerci ?

Long. 19·25 ; pronot. 6·25, latit. pronot. 9, latit. abdom. 10·5 millim.

Hab. Guatemala, San Gerónimo (*Champion* : 1 ♀).

[6. **Eurycotis opaca,** Brunn.

Platyzosteria opaca, Brunn. de W. Syst. Blatt. i. p. 216. 17 (♂).

♂. Major, nigra, sparse punctata; elytra quadrata, truncata, transversa, mesonotum parum superantia. Coxæ testaceo-limbatæ.

Long. 37 millim.

Hab. ANTILLES, Cuba.]

7. [**Eurycotis finschiana,** Sauss.

Platyzosteria finschiana, Sauss. Mélang. Orthopt. ii. ive fasc. p. 111. 7 (1872) (♀ ♂).

Polyzosteria cabreræ, Bolivar, An. Soc. Esp. Hist. Nat. x. p. 355, t. 8. figg. 3, 3 *a* (1881) (♀ ♂).

Hab. ANTILLES, Cuba (*Finsch, in mus. Genavense*).]

[8. **Eurycotis subalata,** sp. n.

♀. Statura et formis *E. mexicanæ*; nigra, capite rufo, ore et ocellis flavo-testaceis. Meso- et metanotum utrinque rufescentia. Elytra æque longa ac lata, metanotum tegentia, illum utrinque paulum superantia, in medio ejus marginem posticum liberantia, subquadrata, coriaceo-punctata; margine posteriore transverso, leviter obliquo, angulo externo rotundato, interno subrectangulo. Alæ tantum delineatæ, corneæ, laterales, angustæ, metanoti longitudine, haud separatæ. Pedes rufi, coxis fuscis; anticis valde punctatis. Lamina supra-analis incisa, angulis hebetatis. Cerci latiusculi, parum acuti.

Long. 18; elytr. 4, pronot. 5·75, latit. pronot. 8 millim.

Hab. SOUTH AMERICA, Colombia (*Mus. Genavense*).]

[9. **Eurycotis occidentalis,** Sauss.

Periplaneta occidentalis, Sauss. Rev. et Mag. de Zool. xvi. p. 318 (1864) (♀); Mém. Mex., Blatt. p. 74. 19; Miss. Scient. Mex., Orthopt. p. 72. 2.

Hab. ANTILLES.]

PELMATOSILPHA, Dohrn.

Pelmatosilpha, H. Dohrn, Stett. ent. Zeit. 1887, p. 410.

Synopsis specierum.

a. Elytra et alæ abdominis longitudine.

b. Castanea, staturæ mediocri (long. 27 millim).—[1. *alaris,* Sss. (Brasilia).] [Mém. Mex., Blatt. p. 75. 20, t. 1. fig. 10.]

bb. Maxima, picea (long. 48 millim.).—[2. *præstans,* Dohrn (Peruvia).] [Stett. ent. Zeit. 1887, p. 411.]

aa. Minor, nigra; elytris abbreviatis; alis minutis infuscatis.—3. ***villana,*** sp. n.

1. **Pelmatosilpha villana,** sp. n. (Tab. IV. figg. 41, 42.)

♀. Nigra, nitida, formis sensim ut in *Eurycoti mexicana*; ocellis flavis, minimis; palpis nigris. Oculi maxime remoti. Elytra cornea abdominis segmenta 2 prima tegentia, margine suturali recto, margine costali ultra medium totus arcuatus (cum margine postico in arcum continuo), angulo apicali suturali minute

rotundato; sulco anali nullo, tantum in $\frac{2}{3}$ marginis suturalis obsolete perspicuo, subperpendiculari. Alæ minutæ, ovatæ, apice late rotundatæ, campo antico quam postico valde latiore, castaneo-opaco, margine anteriore valde arcuato, campo marginali lato, reticulato. Vena discoidalis crassa, lata; vena media ad costam crasse ramosa. Vena dividens recta. Campus posterior angustus, pallidior, ab anteriore per vittam subhyalinam separatus, venis crassis, ramosis ac reticulatus; margine postico subrecto. Pedes nigro-castanei, spinis tibiis et tarsis rufescentibus. Lamina supra-analis longiuscula, rugulosa, apice incisa, marginibus lateralibus integris, angulis rotundatis. Cerci mediocres, apice rufescente.

Long. 23; elytr. 7·5, pronot. 6·2, latit. pronot. 8·4 millim.

Hab. PANAMA, Isthmus of Panama (*E. de Ville; Mus. Genavense et Mus. Bruxellense*).

DORYLÆA, Stål.

Dorylæa, Stål, Orthopt. Nova ex Ins. Philippinis (Öfv. k. Vetensk.-Ak. Förhandl. 1877, no. 10), p. 36.

1. **Dorylæa rhombifolia,** Stoll.

Blatta rhombifolia, Stoll, Kakkerl. t. 3 *d.* fig. 13; Sauss. Mém. Mex., Blatt. p. 267.
Periplaneta rhombifolia, Sauss. Miss. Scient. Mex., Orthopt. p. 72. 1.
Periplaneta histrio, Sauss. Mém. Mex., Blatt. p. 73. 18.
Periplaneta decorata, Brunn. de W. Syst. Blatt. p. 224. 2.

Hab. MEXICO; CENTRAL AMERICA.—BRAZIL.—EAST INDIES.—AFRICA.

A cosmopolitan species within the tropics.

STYLOPYGA, L. H. Fischer et auctt.

1. **Stylopyga orientalis,** Linn. et auctt.

——, Th. Moufet, Insect. sive minimorum animal. Theatrum, p. 138, figg. ♂ ♀ (1634).

Hab. NORTH AMERICA.—MEXICO; CENTRAL AMERICA.—ANTILLES.

A cosmopolitan species, inhabiting store- and dwelling-houses, ships, &c.

PERIPLANETA, Burm.

Kakerlac, Latreille; Serville.
Periplaneta, Burmeister (ex parte); Stål.

The species of this genus inhabit houses and are quite cosmopolitan; they are spread over the tropical and subtropical regions of the whole world, and are a plague in store-houses, ships, &c.

Synopsis specierum.

a. Feminæ. Lamina supra-analis profunde trigonali-incisa:
b. ultra segmentum ultimum ventrale producta, trigonali-bilobata.
c. Elytra tota ferruginea. Pronotum margine postico magis arcuato, rufo- vel fusco-bimaculatum vel disco rufo-fusco, fascia intramarginali circumcirca obsolete flava.—1. *americana,* L.

cc. Elytra ad basin costæ flavo-vittata. Pronotum nigro-bimaculatum vel macula transversa nigra, circumcirca vitta læte flava, margine postico nigro, minus arcuato.—2. *australasiæ*, L.

bb. segmentum ventrale haud superans, rotundato-bilobata. Pronotum omnino castaneum vel ut in *P. americana* obsolete pictum. Elytra tota castanea.—3. *truncata*, Br.

aa. Mares. Lamina supra-analis:

b. grandis, membranacea, producta, rotundata, fissa. Lamina infra-genitalis transversa, stylis longissimis.—1. *americana*, L.

bb. truncata, infra-genitalem haud superans; styli mediocres. Lamina supra-analis:

c. transverse truncata, utrinque rectangula. Lamina infra-genitalis in medio margine sinuato, rotundato-sub-bilobata.—2. *australasiæ*, L.

cc. transversa, angulis rotundatis. Lamina infra-genitalis margine transverso vel subsinuato.—3. *truncata*, Br.



1. **Periplaneta americana**, Linn.

——, M. Merian, Surinaams Ins. p. 1, t. 1 (1730).

Periplaneta americana, auctt.

Periplaneta brunnea, Burm.; Brunner de W.

Hab. Mexico; Central America.—Tropical and subtropical regions generally.

Var. *a.* Fere omnino fusco-castanea. Mexico, Mazatlan.—*b.* Pronoto flavo, nigro-bimaculato, margine toto angustissime fusco (cum *P. australasiæ* facile confunditur).

2. **Periplaneta australasiæ**, Fabr. et auctt.

Hab. Tropical America.—India; Australasia.

3. **Periplaneta truncata**, Brunn.

Periplaneta truncata, Brunn. de W. in litt.; Krauss, Syst. Verz. der canarischen Dermapteren und Orthopteren [Zoologischer Anzeiger, xv. p. 165 (1892)].—♀ ♂.

Var. *a.* Tota castanea.—*b.* Pronoto flavicante, fusco- vel rufo-bimaculato, marginibus anguste fuscis; elytrorum costa basali haud flavo-vittata.—*c.* Pronoti disco toto flavido, circumcirca fusco-limbato.

Hab. Mexico, Atoyac in Vera Cruz (*Schumann*).—Brazil.—Australasia, New Britain (*Brunner*); Africa, Teneriffe (*Krauss*).

This insect appears to have been obtained originally in Australasia. Like *P. australasiæ*, it has probably been conveyed to various distant parts of the world, including Brazil and Mexico. It is apparently as yet a rare insect in America. Mr. Schumann found a single (♂) example at Atoyac in Eastern Mexico.

Tribus PLECTOPTERINÆ *.

Chorisoneuridæ, Brunner de W. Syst. Blatt. p. 251.
Chorisoneuriens, Saussure, Mélang. Orthopt. i. 2e fasc. p. 94.
Chorisoneurites, Saussure, Miss. Scient. Mex., Orthopt. p. 89.
Diploptériens, Saussure, Mém. Mex., Blatt. p. 154 (*Prosoplectiens,* p. 145).
Oxyhaloidæ, Brunner de W. Revis. du Système des Orthoptères, p. 40.

This Tribe is equivalent to the Anaplectinæ, but its species are destitute of spines on the femora; it has the same peculiar structure of the wings, *i. e.* these organs have an apical turned back field—either small and intercalated, or large and appendicular. In the Plectopterinæ this character becomes even more strongly pronounced (*Diploptera*) than in the Anaplectinæ. The resemblance of the two tribes is especially remarkable in the genera *Chorisoneura* (corresponding to *Ectobia*) and *Anaptycta* (corresponding to *Anaplecta*). The genus *Plectoptera* reproduces also with great similarity the wing of an *Anaplecta.*

The name "Chorisoneuridæ" has recently been changed to "Oxyhaloidæ" by Brunner de Wattenwyl, this author having followed the suggestion of Stål in placing *Chorisoneura* in his Tribe "Ectobinæ," next to *Ectobia*, owing to its external resemblance to that genus. The name "Oxyhaloidæ," formed from the generic term *Oxyhaloa*, does not seem suitable, as *Oxyhaloa* is the only genus in which the most important character of the Tribe (appendicular field to the wings) is not expressed (see below, p. 77). In consequence, we prefer to name this Tribe "Plectopterinæ," after the typical genus *Plectoptera* (comp. pp. 14, 15).

We do not adopt the views of Stål and Brunner de Wattenwyl as regards the position of *Chorisoneura.* We consider that the Anaplectinæ (Ectobinæ, Brunn. de W.) and the Plectopterinæ form two parallel series, in each of which much the same kind of types are repeated as follows:—

	Anaplectinæ.	Plectopterinæ.
Wings with small intercalated field	*Ectobia*	*Chorisoneura*, Br. *Prosoplecta*, Sss.
Wings with large appendicular field ..	*Anaplecta*	*Plectoptera*, Sss. *Anaptycta*, Br. *Diploptera*, Sss.

The names "Ectobidæ" and "Chorisoneuridæ," introduced by Brunner de Wattenwyl, are very appropriate, being based on corresponding equivalent genera. Now, as the name "Chorisoneurinæ" has to be abandoned, it is convenient to replace it by the

* For the very curious structure and folding of the wings of the species of this Tribe, comp. H. de Saussure, Mém. Mex., Blatt. p. 154; and 'Annales des Sciences Naturelles,' x. p. 161 (1868).

name "Plectopterinæ," so as to make it equivalent to the Anaplectinæ (adopted instead of Ectobinæ). In this way the names of the two Tribes will be based on their most typical and most perfectly corresponding genera.

Synopsis generum.

1. Majores. Corpus depressum. Caput valde prominulum, oculis maxime remotis. Lamina supra-analis ♀ semiorbicularis, ♂ brevissima, transversa. Cerci brevissimi. Elytra coriacea, venis longitudinalibus numerosis, crassiusculis. Pedes breves, tarsis crassiusculis. Ultimum segmentum ventrale ♀ latum, rotundatum; lamina infra-genitali ♂ rotundata, stylis lateralibus instructa. Habitus *Oxyhaloa buprestoides.*

2. Alæ campo appendiculari nullo; campo anteriore angusto; vena dividente frequenter arcuata; campo posteriore maximo, *amplectente*; vena axillari ramos radiatos numerosos et ad apicem emittente; vena ulnari recta, ramulos obliquos plurimos ad venam dividentem emittente. Ultimum segmentum ventrale ♀ in medio productum, rotundatum, utrinque sinuatum. Elytra coriacea, in requiete abdominis latera liberantia, venis distinctis, quadrato-reticulata, venulis costalibus arcuatis. Pronotum ellipticum. OXYHALOA, Br.

22. Alæ longissimæ; dimidia parte apicali parabolica, tota venosa, in requiete tota replicata; campo radiato minore, plicum transversum alæ haud superans. Ultimum segmentum ventrale ♀ breve, transverse arcuatum. Elytra subcornea, punctata, abdominis latera haud liberantia; venis obsoletis, venulis costalibus nullis. Pronotum ♀ trapezinum.—[DIPLOPTERA, Sss.]

11. Minores. Lamina supra-analis ♀ trigonalis, leviter incisa, ♂ transversa; cerci variabiles. Ultimum segmentum ventrale ♀ elongatum vel amplum, apice subcompressum. Lamina infra-genitalis ♂ stylis brevibus instructa. Alæ quando explicatæ apice campo appendiculari vel intercalato, replicato, haud venoso, instructæ. Pedes frequenter graciles.

2. Corpus glabrum. Antennæ setaceæ. Pronotum ellipticum.

3. Corpus depressum. Cerci laminam supra-analem valde superantes. Alæ apice campo intercalato trigonali instructæ, apice rotundato; campo marginali angusto, venis costalibus numerosis obsito.

4. Elytra venis longitudinalibus tantum 2 (v. discoidali et v. media) (rare 1); vena media ramos obliquos ad marginem suturalem emittente. Venulæ costales parallelæ, pectinatæ. Area costalis baseos latiuscula ac brevis.

5. Elytra submembranacea vel coriacea, venosa, sulco anali distincto.

6. Corpus gracile; caput prominulum, oculis valde remotis. Elytra elongata, submembranacea, apice subacuminata, in requiete corporis latera valde superantia, venis longitudinalibus 2, ramis discoidalibus haud pectinatis. Abdomen elongatum, posterius attenuatum. Ultimum segmentum ventrale ♀ angustum, apice incisum. Cerci longissimi, apice angustissimi.—CHORISONEURA, Br.

66. Corpus ovatum, ellipticum. Caput parum prominulum. Elytra abdomen paulum superantia, vena longitudinali 1, ramis discoidalibus numerosis pectinatis. (Alarum campus appendicularis apicalis, parum vel haud intercalatus. Habitus generis *Anaplectæ*.)—[ANAPTYCTA, Br.]

55. Elytra subcornea, abdomen haud superantia, sulco anali obsoleto vel nullo, tota polita, haud in longitudinem punctata; venis per transluciditatem distinctis, subtilibus, distributione illis generis *Chorisoneuræ* similibus. Pronotum ♀ semiorbiculare. Cerci longiusculi.—[HEMIPTEROTA, Sss.]

44. Elytra cornea, tota in longitudinem multi-venosa, seriebus longitudinalibus punctatis inter venas obsita; sulco anali nullo, venulis costalibus pectinatis nullis; area costali basi angusta fere et ad apicem elytri angustissime perducta et per sulcum discreta. Cerci mediocres.—[AREOLARIA, Br.]

33. Corpus convexum, ellipticum; elytris parum elongatis, corneis, sulco anali nullo. Alæ campo appendiculari parabolico, elongato, basi transverso instructæ; campo marginali apice dilatato, venis costalibus parum numerosis.—PLECTOPTERA, Sss.

22. Caput, pronotum et elytra pilosa, lanosa. Antennæ incrassatæ, plumosæ. Pronotum quadratum. Caput valde prominulum, triangulare; oculis maxime remotis. Elytra valde angusta, subcornea, abdomen superantia. Alæ apice campo appendiculari variabili instructæ. Abdomen apice attenuatum. Pedes graciles, tibiis graciliter spinosis.—HYPNORNA, St.

OXYHALOA, Brunn. de W.

Oxyhaloa, Brunner de W. Syst. Blatt. p. 252; Saussure, Miss. Scient. Mex., Orthopt. p. 89.

This rather aberrant genus lacks the most important characters of the Tribe Plectopterinæ—to wit, the wings do not possess an intercalated or appendicular field, which, in rest, is turned back on the upperside. But this exception is more apparent than real; in *Oxyhaloa* the intercalated triangular field is virtually present, but it is confounded with the posterior field; and this is why the axillar nervure is arched, enveloping the posterior margin of the anterior field *. The species of the Old World are still more aberrant, as in these the posterior field does not envelop the hind margin of the anterior one, and the axillar vein is straight.

1. **Oxyhaloa buprestoides**, Sauss.

Blatta buprestoides, Sauss. Rev. et Mag. de Zool. 1862, p. 166; Mém. Mex., Blatt. p. 116. 55, fig. 20 (♀).

Ischnoptera buprestoides, Brunn. de W. Syst. Blatt. p. 140. 20.

Oxyhaloa buprestoides, Sauss. Miss. Scient. Mex., Orthopt. p. 90, t. 2. fig. 48.

Fuscescens, fusco-punctata. Caput flavescens, facie et vitta verticis fuscis, vittaque interantennali flava. Pronotum ellipticum, margine posteriore leviter subarcuato, haud angulato, disco brunneo, marginibus lateralibus testaceis, valde fusco-punctatis; sulcis disci campum trapezinum delineantibus; margine posteriore transverse striolato. Elytra abdomen superantia, fusco-punctata, margine costali haud sinuato, in medio recto. Alæ vitreæ, venis brunneis, campo marginali griseo; venæ ulnaris ramulis 7–10 pectinata. Pedes testacei, fusco-punctati. Abdomen fuscum, marginibus et ventre medio fulvis, nigro-punctatis.

♀. Long. 18·5; elytr. 17, pronot. 4·25, latit. pronot. 6 millim.—♂. 14·6; elytr. 11·75, pronot. 3·5, latit. pronot. 4·6 millim.

Hab. MEXICO; GUATEMALA.—CUBA (*Mus. Genavense*).

* Comp. H. de Saussure, Annales des Sciences Naturelles, x. pp. 161–200, t. 11 (1868); and Miss. Scient. Mex., Orthopt. pp. 89, 90, t. 2. fig. 48.

CHORISONEURA, Brunn. de W.

Chorisoneura, Brunner de W. Syst. Blatt. p. 255 ; Saussure, Miss. Scient. Mex., Orthopt. p. 90.

In this genus the elytra have always two longitudinal nervures—the discoidal and the median veins. The nervures of the discoidal field are either all longitudinal or oblique ; in the latter case they form oblique branches of the median vein, but they are neither numerous nor dense.

Synopsis specierum.

I.

a. Venæ campi discoidalis omnes longitudinales.—[1. *anomala*, sp. n.]

aa. Venæ campi discoidalis obliquæ, in vena ulnari remote subpectinata.

b. Campus intercalatus alarum basi rectangulus, apice prominulus, rotundatus vel subtruncatus.

c. Vena ulnaris alarum apice ramosa.—[2. *texensis,* sp. n.] ; [3. *surinama,* Sss.].

cc. Vena ulnaris alarum apice indivisa. (Campus intercalatus basi subacutus.)

d. Alæ infuscatæ, campo intercalato valde prominulo, apice arcuato, basi obtusangulo. —[4. *dimidiaticornis,* sp. n.]

dd. Alæ flavicantes.

e. Campus intercalatus minus prominulus, apice subtruncatus, parum arcuatus, basi subacutangulus. Elytra vix fulvescentia.—5. *mysteca,* Sss.

ee. Campus intercalatus prominulus, apice valde arcuatus, basi rectangulus. Elytra fulva.—6. *flavipennis,* sp. n.

bb. Campus intercalatus basi acutangulus.

c. Vena ulnaris alarum apice ramosa ; campus intercalatus apice vix prominulus.

d. Campus intercalatus apice leviter incisus ; alæ flavicantes, venis et costa flavis.— 7. *pellucida,* Sss. ; [8. *minuta,* sp. n.].

dd. Campus apicalis haud incisus.

e. Alæ flavicantes, apice infuscatæ.—[9. *inquinata,* Sss.]

ee. Alæ hyalinæ, venis brunneo-testaceis, campo marginali vitta brunnea.—10. *tæniata,* sp. n.

cc. Vena ulnaris alarum apice indivisa vel haud distincte ramosa.

d. Alæ infuscatæ, campo intercalato apice prominulo, subsinuato, basi subrectangulo ; elytra inter venas frequenter infuscata.—11. *translucida,* Sss.

dd. Alæ flavicantes ; campus intercalatus breviter prominulus :

e. apice arcuatus, basi valde acutangulus.—[12. *gracilis,* Sss.]

ee. apice subtruncatus, basi subrectangulus.—5. *mysteca,* Sss.

II.

1. *Pronotum* :

a. Antice arcuatum.—[2. *texensis*] ; 6. *flavipennis* ; 10. *tæniata* ; 11. *translucida.*

aa. Magis ellipticum, antice transversum, subtruncatum. — 5. *mysteca* ; 6. *flavipennis* ; 7. *pellucida* ; [9. *inquinata*] ; 11. *translucida* ; [12. *gracilis*].

2. *Elytrorum rami ulnares* :
   a. longitudinales.—[1. *anomala.*]
   aa. obliquæ.
      b. Parum numerosæ (4-5), oblique longitudinales, parum pectiniformes.—[2. *texensis*] ; 6. *flavipennis.*
      bb. Magis obliquæ et numerosæ, oblique pectinatæ. — 5. *mysteca* ; 7. *pellucida* ; [9. *inquinata*] ; 10. *tæniata* ; 11. *translucida.*

3. *Elytra in extensu* :
   a. colorata flavida.—6. *flavipennis.*
   aa. vitrea, leviter flavicantes.—*reliquæ species.*

4. *Alarum campus apicalis intercalatus vel appendicularis* :
   a. apice prominulus, margine apicali valde arcuato. (Tab. II. fig. 21.)
      b. margine apicali integro, basali rectangulo :
         c. margine apicali toto arcuato, basali obtusangulo.—[2. *texensis*] ; [4. *dimidiaticornis*].
         cc. margine apicali subintegro, basali rectangulo :
            d. margine apicali toto arcuato.—6. *flavipennis.*
            dd. margine apicali obtusiore, subtruncato.—11. *translucida.*
      bb. margine apicali ad campum anteriorem minute inciso.—5. *mysteca.*
   aa. parum prominulus, basi acutangulus (Tab. II. fig. 22) ; margine apicali ad campum anticum leviter inciso :
      b. margine apicali toto arcuato.—10. *tæniata* ; [12. *gracilis*].
      bb. margine apicali subtruncato, vel parum arcuato. — 7. *pellucida* ; [8. *minuta*] ; [9. *inquinata*].

5. *Alarum campi marginalis venæ costales* :
   a. haud clavatæ, vix incrassatæ.—[1. *anomala.*]
   aa. apice clavatæ ;
      b. elongato-clavatæ ;
         c. venulis transversis nullis.—[2. *texensis.*]
         cc. venulis transversis perpendicularibus inter illas ;
            d. vena mediastina haud continua :
               e. venæ costales basi perpendiculares, in medio ad venulas transversas fractæ (saltem primi), dehinc obliquæ.—[8. *minuta*] ; 11. *translucida* ; [12. *gracilis*].
               ee. venæ costales magis obliquæ, ante medium potius arcuatæ quam fractæ.—[3. *surinama*] ; 7. *pellucida* ; [10. *tæniata*].
            dd. vena mediastina plus minus continua, undata, cum venulas transversas confusa.—6. *flavipennis* ; [9. *inquinata.*]
      bb. nodoso-clavatæ ;
         c. furcatæ, venulis transversis paucis.—[4. *dimidiaticornis.*]
         cc. venulis transversalibus evidentibus :
            d. venæ costales ad illas frequenter fractæ.—5. *mysteca* ; [9. *inquinata*] ; 11. *translucida.*
            dd. venæ costales potius basi arcuatæ, nonnunquam fractæ.—10. *tæniata.*

6. *Alarum campus marginalis*:

a. totus pellucens (nonnunquam infuscatus).—[2. *texensis*]; [3. *surinama*]; 5. *mysteca*; 7. *pellucida*; [8. *minuta*]; [9. *inquinata*]; 10. *tæniata*; 11. *translucida*.

aa. ad venas costales plus minus coriaceus;

b. nonnunquam subcoriaceus.—5. *mysteca*; 7. *pellucida*.

bb. distincte coriaceus.—6. *flavipennis*; [12. *gracilis*].

aaa. dubiæ.—[4. *dimidiaticornis*]; [9. *inquinata*].

[1. **Chorisoneura anomala,** sp. n. (Tab. II. figg. 23, 24.)

♀. Sat minuta, fusca, vertice rufescente. Pronotum fere rotundato-semiorbiculare, pellucido, disco fusco marginem posticum anguste liberante. Elytra abdomen vix superantia, testacea, nebulosa, linea humerali fusca. Alæ fuscæ campo appendiculari majore, in requiete inter campum anteriorem et posteriorem reconditus. Vena ulnaris arcuata, haud ramosa. Pedes fusco-testacei. Segmenta abdominis subtus pallide limbata. Lamina supra-analis rotundato-trigonalis. Ultimum segmentum ventrale majusculum subincisum.

Long. 6·6; elytr. 5·7, pronot. 1·8, latit. pronot. 2·5 millim.

Hab. PERU, Tarma (*Mus. Genavense*).

A species characterized by its rather short elytra, and by the appendicular field of the wings, which is folded downwards and hidden under the wing.]

[2. **Chorisoneura texensis,** sp. n.

♂. Tota fulvo-ochracea; statura paulo minore quam *Ch. pellucidæ*, paulo majore quam *Ch. mystecæ*. Pronoti et elytrorum margines laterales vitrei. Elytrorum vena discoidalis 4–5-ramosa; ejus rami sat longitudinales, haud distincte pectinati. Alæ flavicantes, venis flavis. Venæ costales 5–6 apice clavatæ, partim basi furcatæ. Area medio-discoidalis quam area medio-ulnaris duplo latior, venulis transversis paucis, in dimidia parte apicali. Vena ulnaris apice haud ramosa. Campus appendicularis apice valde prominulus obtuse semiorbicularis, basi obtusangulus.

Long. 9·5; elytr. 9, pronot. 2·25, latit. pronot. 3·2 millim.

Hab. NORTH AMERICA, New Mexico, Texas (*Boll, Mus. Genavense*).]

[3. **Chorisoneura surinama,** Sauss.

Chorisoneura surinama, Sauss. Rev. et Mag. de Zool. 1868, p. 100. 13; Miss. Scient. Mex., Orthopt. p. 93. 5 (♂).

Hab. GUIANA, Surinam.]

[4. **Chorisoneura dimidiaticornis,** sp. n.

♀. Fusco-castanea, fronte et vertice rufescentibus, basi $\frac{2}{5}$ fuscæ apice $\frac{3}{5}$ albidæ. Pronotum subellipticum, bi-impressum, disco trapezino-fusco, marginibus lateralibus late, posteriore anguste pellucentibus; hoc subarcuato; humeris carinulatis. Elytra castanea, subcornea, elongata, angusta, venis vix perspicuis, margine laterali anguste pellucido. Alæ infuscatæ, venis costalibus 4+6 nodosis; vena ulnari indivisa, campo appendiculari apice obtuse semiorbiculari, basi rectangulo; vena axillari biramosa. Pedes pallide testacei. Abdomen fuscum, luteo-marginatum; cerci fusco-testacei.

Long. 6; elytr. 6·2, pronot. 1·8, latit. pronot. 2·6 millim.

Hab. PERU, Tarma (*Mus. Genavense*).

This species is extremely like *Anaplecta azteca* (anteà, p. 24), but differs from it in

its generic characters—mutic femora, &c. The elytra are not punctured; the wings have the apical field smaller and angular at the base, the venulæ costales strongly clavate, and the area medio-discoidalis reticulated into square cells. In *A. azteca* this area has only two transverse venulæ, the second angular and emitting a nervure.]

5. **Chorisoneura mysteca,** Sauss.

Blatta mysteca, Sauss. Rev. et Mag. de Zool. 1862, p. 167; Mém. Mex., Blatt. p. 110. 47.

Chorisoneura mysteca, Brunn. de W. Syst. Blatt. p. 258. 4; Sauss. Miss. Scient. Mex., Orthopt. p. 91. 1.

Minor, rufescens; pedibus testaceis; pronoti disco flavido vel brunnescente, marginibus pellucidis. Elytra ♀ parum elongata, parum acuta, subvitrea vel nebulosa vel in areolis brunnescentia; rami ulnares oblique pectinati. Alæ subhyalinæ vel nebulosæ, venis brunneis vel flavidis, campo axillari apice et campo marginali flavicantibus; area medio-discoidalis areæ medio-ulnari duplo latior, tota transverse venosa. Venæ costales fractæ, apice nodosæ. Campus appendicularis parvus, tamen apice prominulus, basi acutangulus, margine apicali truncato vel arcuato. Abdomen frequenter infuscatum. ♀ ♂.

♂ ♀. Long. 8, elytr. 9 millim.

Hab. MEXICO, Soledad 5000 feet, Amula 6000 feet, Omilteme 8000 feet, and Xucumanatlan 6000 feet, all in Guerrero, Mexico city, Teapa in Tabasco (*H. H. Smith*), Vera Cruz (*Saussure*); GUATEMALA, Dueñas, Capetillo (*Champion*).

6. **Chorisoneura flavipennis,** sp. n. (Tab. II. fig. 21.)

♂. Rufescens, pronoti disco capiteque flavicantibus. Antennæ flavicantes, basi fuscæ, articulis 1, 2 fulvis. Pronoti margines vitrei. Elytra fulva, parum translucida, area costali vitrea. Rami venæ ulnaris parum numerosi (4–5), oblique longitudinales, plus minus furcatæ. Alæ vitreæ, venis flavis: campo marginali, campo intermedio apice, necnon campi appendiculari dimidia parte postica, flavicantibus. Venæ costales 6–7 clavatæ opacæ; campus marginalis inter clavas opaco-inquinatus. Campus intercalatus valde prominulus, margine apicali valde arcuato, basi rectangulo. Pedes testacei. Abdomen rufescens.—Species distincta elytris coloratis.

Long. 8; elytr. 8·5, pronot. 1·8, latit. pronot. 3 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*).

7. **Chorisoneura pellucida,** Sauss.

Blatta pellucida, Sauss. Mém. Mex., Blatt. p. 112. 49 (♀).

Chorisoneura pellucida, Sauss. Miss. Scient. Mex., Orthopt. p. 92. 3, t. 2. figg. 49, 49 A.

Major, rufescens, subtus pallida. Elytra leviter fulvescentia vel in areolis fulva; campo marginali pellucido; ramis ulnaribus oblique pectinatis. Alæ hyalinæ, venis flavis; campo axillari apice et campo marginali flavidis. Area medio-discoidalis ut in *C. mysteca*; venæ costales a basi obliquæ, fractæ, clavatæ. Campus intercalatus basi acutangulus, apice parum prominulus, parum arcuatus, leviter incisus, campum anteriorem superans.

♀. Long. 9, elytr. 11·5 millim.; ♂. Long. 10, elytr. 10·7 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*), Eastern Cordillera, near Moyoapan (*Saussure*), Teapa in Tabasco (*H. H. Smith*).

[8. **Chorisoneura minuta,** Sauss.

Chorisoneura minuta, Sauss. Rev. et Mag. de Zool. 1869, p. 113. 17 (♂); Miss. Scient. Mex., Orthopt. p. 95. 8.

Hab. Argentine Republic, Corrientes.]

[9. **Chorisoneura inquinata,** Sauss.

Chorisoneura inquinata, Sauss. Rev. et Mag. de Zool. 1869, p. 112. 16 (♀); Miss. Scient. Mex., Orthopt. p. 94. 6.

Hab. Brazil.]

10. **Chorisoneura tæniata,** sp. n. (Tab. II. fig. 22.)

Testacea; nonnunquam linea verticis inter oculos fusca. Pronotum pellucidum, margine anteriore arcuato. Elytra pellucida, levissime fulvescentia vel areolis reticulationis leviter fulvis; campo marginali subvitreo; ramis campi ulnaris parum longitudinalibus. Alæ vitreæ, venis testaceo-brunneis; illis campi marginalis decoloribus, vitta campi marginalis ad venam discoidalem posita, brunnea. Campus intercalatus acutangulus, apice vix prominulus, a campo anteriore per incisuram angularem separatus. Abdomen superne utrinque vitta brunnea. ♀ ♂.

♀. Long. 9, elytr. 9 millim.; ♂. Long. 8, elytr. 8 millim.

Hab. Mexico, Tabasco (*H. H. Smith*).

11. **Chorisoneura translucida,** Sauss.

Blatta translucida, Sauss. Mém. Mex., Blatt. p. 113. 50 (♀).

Chorisoneura translucida, Sauss. Miss. Scient. Mex., Orthopt. p. 91. 2.

Statura *C. mystecæ*; rufescens, pedibus testaceis; vertice et pronoti disco brunneis; elytris testaceis, in areolis infuscatis, vitta basali humerali fusca, campo marginali subpellucido, parte obtecta elytri dextri infuscata. Rami venæ ulnaris parum longitudinales. Alæ fusco-nebulosæ, apice et campo marginali infuscatis, venis costalibus 8–9 parum obliquis apice nodosis, venulis transversis inter primas 2–3. Area medio-discoidalis quam area medio-ulnaris haud duplo latior, tota longitudine transverse venosa. Campus intercalatus nebulosus, basi subacutangulus, apice modice prominulus, in medio obtusus.

Long. 7·5, elytr. 7·5 millim.

Hab. Mexico, Eastern Cordillera (*Saussure*).

[12. **Chorisoneura gracilis,** Sauss.

Blatta gracilis, Sauss. Rev. et Mag. de Zool. 1862, p. 167; Mém. Mex., Blatt. p. 111. 48 (♀).

Chorisoneura gracilis, Sauss. Miss. Scient. Mex., Orthopt. p. 93. 4 (♀).

Chorisoneura flavo-antennata, Brunn. de W. Syst. Blatt. p. 257. 2.

Statura *C. mystecæ*; ferrugineo-flava, fronte inter antennas et capite supra nigris. Pronotum antice parum arcuatum. Elytra et alæ flavicantia; alarum venæ ut in *C. mysteca*, venis costalibus tamen elongato-clavatis; campo intercalato apice parum prominulo, vix arcuato. ♀ ♂.

Long. 8, elytr. 9 millim.

Hab. Brazil, Rio Grande do Sul.]

The following South-American species also belong to this genus:—

Chorisoneura multivenosa, Sauss.; *nigrifrons*, Serv.; *discoidalis*, Burm.; *sordida*, Brunn.

ANAPTYCTA, Brunn. de W.

Anaptycta, Brunner de Wattenwyl, P. Z. S. 1892, p. 202.

We place this genus in the Tribe Plectopterinæ, the femora not being spined; but its facies is quite that of *Anaplecta*. The wings are formed as in that genus, and have an appendicular articulated apical field. The elytra are parted by a single longitudinal nervure; they are (as in the genus *Ectobia*, Br.) strongly pectinated by the numerous costal and discoidal branches, and have a deep anal sulcus.

[1. **Anaptycta bipunctulata,** Brunn.

Anaptycta bipunctulata, Brunner de W. P. Z. S. 1892, p. 202, t. 15. fig. 1.

Hab. ANTILLES, St. Vincent.]

[HEMIPTEROTA *, Sauss.

Hemipterota, Saussure, Societas Entomologica, 1893, p. 67.

Habitus generis *Ceratinopteræ*. Caput vix prominulum. Pronotum majusculum, corneum, transverse parabolicum, antice leviter truncatum, convexiusculum; marginibus leviter deflexis. Elytra cornea, polita, abdominis longitudine vel breviora, sicut in genere *Chorisoneura* venosa, venis præsertim subtilibus remotis, per transluciditatem perspicuis. Pedes robusti.—♀ ♀. Lamina supra-analis trigonalis, apice incisa. Cerci compressi, apice haud longe anguste producti, hebetati. Ultimum segmentum ventrale apice minute compressum. Alæ rudimentales.

The elytra are corneous, as in *Areolaria*, though they are very different in structure in the two genera. In *Areolaria* the elytra are entirely occupied by very numerous, contiguous, parallel, longitudinal veins, even in the marginal field, separated by lines of punctures. In *Hemipterota* the elytra are not punctured, the veins are fine, only distinct when viewed by transmitted light, remote from each other, and disposed as in *Chorisoneura*. *Hemipterota* may be regarded as a somewhat degenerate form of *Chorisoneura* with abbreviated elytra. *Areolaria* belongs to the type of *Prosoplecta*, but with quite corneous elytra.

1. **Hemipterota punctipes,** Sauss. (Tab. II. fig. 25.)

Hemipterota punctipes, Sauss. Societas Entomologica, 1893, p. 67.

♀. Fulvo-testacea. Antennæ ultra medium brunnescentes. Vertex vix prominulus. Pronotum testaceum; disco fusco-punctato et lineolato, obsolete castaneo-bivittato; marginibus lateralibus late pellucidis; angulis lateralibus posticis vix rotundatis. Elytra sordide testacea, venis obsoletis, abdominis apicem liberantia, apice attenuata, margine costali et ad apicem arcuato. Campus marginalis latiusculus, venis costalibus 7–8 partim furcatis, valde transversis. Rami venæ ulnaris obliquæ, obsoletæ. Sulcus analis nullus. Alæ rudimentariæ. Tibiæ ad exsertionem spinarum nigro-punctatæ. Abdomen rufescens, supra castaneo-varium, subtus segmentis utrinque macula fusca. Lamina supra-analis carinata, apice minute bilobata. Cerci apice fusco.

Long. 8·7; elytr. 5, pronot. 2·6, latit. pronot. 4 millim.

Hab. PERU, Tarma (*Mus. Genavense*).]

* ἥμισυς, half; πτερωτὸς, winged: being half-winged.

PLECTOPTERA, Sauss.

Plectoptera, Saussure, Mém. Mex., Blatt. p. 153; Miss. Scient. Mex., Orthopt. p. 96.
Hololampra, Saussure, Mém. Mex., Blatt. p. 94, sect. 2.

This genus is equivalent to *Anaplecta*, of the Anaplectinæ; but the elytra are convex and corneous, very finely punctured, without apparent nervures, except when viewed by transmitted light, and without anal sulcus. The wings have the appendicular field larger than in *Anaplecta* (being half the length of the wing); the costal area is also more dilated at its extremity, with but few non-incrassated costal venulæ, the margin incrassated and more or less horny.

Synopsis specierum.

a. Species flavo-testaceæ, pronoto immaculato.
  b. Unicolores, omnino pallidæ:
    c. majores.—[1. *poeyi*, Sss.]; [2. *unicolor*?, Burm.].
    cc. minor.—[3. *krugi*, sp. n.]
  bb. Campo anali elytrorum eburneo.—[3. *krugi*, var. ♂.]
aa. Species diverse coloratæ, pronoti disco fusco vel rufo.
  b. Testaceæ,
    c. pronoti disco circumcirca testaceo.
      d. Lutea, nigro-tessellata; pronoti disco medio nigro.—4. *picta*, sp. n.
      dd. Fulva; pronoti disco medio rufo.—5. *circumcincta*, sp. n.
    cc. pronoti disco postice haud luteo-marginato; elytris variegatis.—[6. *micans*, Boliv.]
  bb. Obscuriores.
    c. Elytra flavo et nigro variegata.—[6. *micans*, Boliv.]
    cc. Elytra plus minus obscura.
      d. Pronotum nigrum, marginibus lateralibus testaceis; elytra flavo-nigrescentia.
        e. Elytra nigro-punctata.—[7. *porcellana*, Sss.]
        ee. Elytra campo anali fusco-umbrato.—8. *pulicaria*, sp. n.
      dd. Castanea; pronoto circumcirca testaceo-limbato.—9. *circumdata*, sp. n.

[1. **Plectoptera poeyi**, Sauss.

Blatta poeyi, Sauss. Rev. et Mag. de Zool. 1862, p. 164.
Plectoptera poeyi, Sauss. Mém. Mex., Blatt. p. 177. 83; Miss. Scient. Mex., Orthopt. p. 96. 2; Bolivar, Orthopt. de Cuba, in Mém. Soc. Zool. Fr. i. p. 129 (1888).
Ceratinoptera poeyi, Brunn. de W. Syst. Blatt. p. 79. 5.

Hab. ANTILLES, Cuba.]

[2. **Plectoptera ? unicolor**, Burm.

Anaplecta unicolor, Burm. Handbuch, ii. p. 494. 4; Brunn. de W. Syst. Blatt. p. 64. 3.

Hab. ANTILLES, Cuba.—Anne *P. poeyi*, Sauss.?]

[3. **Plectoptera krugi,** sp. n.

P. poeyi paulo minor, fulvo-rufescens; frontis linea transversa pallida; occipite obscuro. Pronoti discus aurantius, maculis 2 rufis (nonnunquam conjunctis); margines laterales late, anterior anguste, flavido-pellucentes. Elytra rufescentia, venis flavidis, ac multifarie subtilissime flavido punctulato-lineolatis, area basali costali testacea. Pedes testacei, tibiis posticis apice fuscis. Abdomen infuscatum.

Var. *a.* Pronoti disco flavido; elytrorum lineolis flavidis obsoletis.—*b.* Minor, statura *P. pulicariæ*.—*c.* Elytrorum campo anali maculaque in parte obtecta elytri dextri rufidis. ♂.—*d.* Color magis ochracea.

♀. Long. 5–5·6; latit. 3–3·2, long. elytr. 4–4·1; ♂. Long. 4·6 millim.

Hab. Antilles, Cuba (*Dr. Krug; Mus. Dresdense et Mus. Genavense*).

The elytra often seem to be yellowish or rufous; viewed under a rather strong lens they appear to be covered with yellow lines running in various directions, and formed by small yellow punctures.]

4. **Plectoptera picta,** sp. n. (Tab. III. fig. 9.)

♀. Albescens. Caput nigrum, vitta frontali infra oculos albida. Antennæ luteæ. Pronotum luteum, macula discoidali transversa nigra antice et utrinque incisa. Elytra cornea, sulco anali nullo, subtilissime nigro-punctulata, ad sulcum analem (hypot.) nigro-maculata vel oblique fasciata, ultra medium nigro vel griseo umbrata, ad marginem griseo-punctata. Alæ illis *P. poeyi* similes, campo appendiculari et venis campi antici pallide aurantiis, campo posteriore leviter infuscato, campi marginalis venulis costalibus et stigmate corneo infuscatis. Coxæ piceæ. Abdomen subtus luteum, segmentis 1°–4° utrinque macula obliqua nigra; ultimum segmentum rufescens.

Long. cum elytr. 6; pronot. 1·3, latit. pronot. 2 millim.

Hab. Mexico, Atoyac in Vera Cruz (*Schumann*).

5. **Plectoptera circumcincta,** sp. n.

♀. *P. circumdatæ* simillima, sed paulo minor, flavo-testacea. Antennæ flavo-testaceæ, apice obscuriores Caput rufescens, vitta frontali inter-antennali lutea, vertice rufo, a fronte per lineam inter-ocularem nigram separato. Pronotum rufo-castaneum vel rufum, circumcirca flavido-limbatum; disco rufo elliptico. Elytra testacea, leviter rufescentia, ad sulcum analem (obliteratum) rufo-umbrata, margine costali basi testaceo. Alæ ut in specie laudata, campo marginali apice minus fusco, margineque minus calloso. Pedes testacei. Abdomen testaceo-rufescens, superne fuscescens.

Long. 5·3; pronot. 1·5, latit. pronot. 2·2, elytr. 5·2 millim.

Hab. Mexico, Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*).

This may prove to be a small pale variety of *P. circumdata*?

[6. **Plectoptera micans,** Bolivar.

Plectoptera micans, Bolivar, Orthopt. de Cuba, in Mém. Soc. Zool. Fr. i. p. 129 (1888).

Hab. Antilles, Cuba.—Species *P. pictæ* affinis.]

[7. **Plectoptera porcellana,** Sauss.

Blatta porcellana, Sauss. Rev. et Mag. de Zool. 1862, p. 164.

Plectoptera porcellana, Sauss. Mém. Mex., Blatt. p. 176. 62; Miss. Scient. Mex., Orthopt. p. 96. 1, t. 2. fig. 50; Bolivar, Mém. Soc. Zool. Fr. i. p. 129 (1888).

Ceratinoptera porcellana, Brunn. de W. Syst. Blatt. p. 79.

Minuta. Pronoti discus niger, castaneus vel rufus; marginibus lateralibus late, reliquis anguste pellucidis. Elytra olivacea vel fusco-rufa, confertissime et subtilissime albido-punctulata, margine costali saltem basi testaceo.

Var. *a.* Pronoti macula fusca disci marginem posticum involvens.—*b.* In maculas 2 divisa.—*c.* Color flavido-testacea; macula pronoti rufa, flavida, vel obsoleta, elytris maculis rufidis.

Long. cum elytris 4·5 millim.

Hab. ANTILLES, Cuba.]

8. **Plectoptera pulicaria,** sp. n. (Tab. III. fig. 8.)

P. pictæ paulo minor, obscurior. Caput et thorax castanea. Antennæ fusco-rufæ. Pronoti margines laterales latiuscule pellucente testaceæ. Elytra fusco-testacea, punctulata; margine costali pallidiore, area basali testacea; campo anali fusco-castaneo, angulo interno fusco-testaceo. Alæ leviter infuscatæ, venis campi antici et campo appendiculari flavidis; hoc ad marginem anteriorem latiuscule subaurantio, prope apicem fusco-umbrato. Campus marginalis apice fuscus. Abdomen fuscum.

Long. cum elytr. 5·5 millim.

Hab. PANAMA, Bugaba (*Champion*).

9. **Plectoptera circumdata,** sp. n. (Tab. III. fig. 10; Tab. IV. fig. 17.)

Major, fusca. Vertex fusco-testaceus. Pronotum fusco-castaneum, circumcirca testaceo-limbatum; pars fusca maculam transversam, postice arcuatam delineans. Elytra rufo-testacea, margine costali basi pallidiore, parum venosa. Alæ leviter infuscatæ; venis campi antici saltem basi flavidis; apice campi marginalis fusco, margine ipso crasse calloso, rufo-castaneo. Campus appendicularis infuscato-rufescens, margine anteriore magis colorato. Abdomen fusco-piceum. Pedes testaceo-picei.

Long. sine elytr. 5·4; pronot. 1·2, long. elytr. 5·2 millim.

Hab. GUATEMALA, Vera Paz (*Champion*).

HYPNORNA, Stål.

Hypnorna, Stål, Kongl. Svenska Freg. Eugenies Resa, Ins. p. 312 (1861); Saussure, Mém. Mex., Blatt. p. 149 (1864); Brunner de Wattenwyl, Syst. Blatt. p. 263 (1865).

Insecta gracilia, valde depressa, pilosella.—Antennæ ante medium crassæ, crasse piloso-hirsutæ, dehinc graciles, submoniliformes, abdomen leviter superantes. Caput valde prominulum, pronoto æquilatum, triangulare, deplanatum, vertice transverso, lato, rotundato-compresso, a fronte per sulcum et carinulam transversam separatum. Oculi invicem maxime remoti, compressi. Pronotum angustum, subquadratum, paulo longius quam latius, parum convexum vel anterius rotundatum, marginibus lateralibus subarcuatis, leviter reflexis. Elytra coriacea, angustissima, elongata, apice anguste rotundata; venis leviter prominulis; margine costali angusto, fere tota longitudine reflexo; campo marginali ad apicem elytri æqualiter late extensum, venis costalibus paucis, valde longitudinalibus; vena ulnari ramos 2–3 obliquos emittente; sulco anali haud explicato. Alæ angustæ, apice campo appendiculari reflexo instructæ; campo posteriore parum amplo. Abdomen gracile. Lamina supra-analis ♀ trigonalis, cercis gracilibus, acutis. Segmentum ultimum ventrale ♀ transverse quadratum, vel elongatum, angulatum. Lamina infra-genitalis ♂ transversa, minuta, trapezina, stylis 2 longis instructa. Cerci ♂ longiusculi, crassi, deplanati.

Synopsis specierum.

a. Pronotum anterius semiorbiculariter arcuatum, marginibus lateralibus leviter arcuatis, margine postico transverso. Campus appendicularis alarum minutus, triangularis, basi intercalatus. Antennæ? Elytra remote pilosa.—*Hypnorna*, Stål.

b. Rufescens, pedibus testaceis.—[1. *blanda*, sp. n.]

bb. Nigra, capite testaceo.—[2. *hummeli*, Stål.]

aa. Pronotum subquadratum, margine anteriore levissime arcuato, angulis anticis rotundatis, marginibus lateralibus fere rectis. Alarum campus appendicularis apicalis parabolicus, haud intercalatus, basi rectus. Antennæ plumosæ (tricolores). Elytra brevissime tomentosa.—*Calhypnorna*, nob.

b. Fusco-nigra, alis nigris. Elytrorum campus marginalis venis costalibus valde obliquis instructus.—3. *pulchella*, sp. n.

bb. Rufa, alarum margine costali aurantio. Campus marginalis elytrorum venis longitudinalibus instructus.—4. *amœna*, sp. n.

[1. **Hypnorna blanda,** sp. n. (*Hypnorma blanda*, Tab. III. figg. 17–19.)

♂. Fusco-rufescens. Caput rufum. Antennæ? Pronotum castaneum, marginibus lateralibus rufis, margine anteriore valde rotundato, in marginibus lateralibus continuo, his arcuatis. Elytra rufa, apice fulvescentia, remote pilosa, parum elevato-venosa, fere punctato-reticulosa; vena ulnari obsoleta, biramosa; margine laterali luteo-testaceo. Alæ diaphano-infuscatæ, campo marginali obscuriore, margine anguste subrufescente, venis costalibus apice clavatis. Campus appendicularis minutus, intercalatus, cordiformis, intus acutangulus, apice incisus, campum anteriorem et posteriorem minus quam dimidia parte superans. Pedes testacei, coxis partim fuscis. Abdomen fuscum; lamina infra-genitalis rotundata, stylis longissimis 2 albidis instructa.

Long. cum elytr. 11; elytr. 9·5, pronot. 2·2, latit. pronot. 2·2 millim.

Hab. Brazil (*Mus. Genavense*).]

[2. **Hypnorna hummeli,** Stål.

Hypnorna hummeli, Stål, Freg. Eugen. Resa, Ins. p. 312, t. 5. fig. 4 (♂) (1861); Brunn. de W. Syst. Blatt. p. 263 (♂); Sauss. Mém. Mex., Blatt. p. 149.

♂. Fusco-nigra, capite rufo-testaceo. Antennæ nigræ, basi et apice flavæ. Pronoti margines laterales elytrorumque margo costalis albido-hyalini. Alæ infumatæ. Pedes dilute fusco-testacei, femoribus basin versus coxisque apice pallidis.

Long. 11; latit. 3 millim.

Hab. Brazil, Rio Janeiro.]

3. **Hypnorna (Calhypnorna) pulchella,** sp. n. (*Hypnorma pulchella*, Tab. III. fig. 16.)

♀. Nigra. Frons inter oculos transverse obscure rubra. Antennæ nigræ, nigro-pilosæ, in medio annulo longo albido (art. 6) dehinc articulis 2–3 nigris; parte apicali ultra illos pallide rufescens. Pronoti margines laterales albidi. Elytra margine costali anguste albido. Alæ fuliginosæ, purpureo-nitentes; campo marginali nigro; campo appendiculari parabolico, fusco, margine basali transverso, recto. Pedes albidi, genubus nigris; posteriores nigri, tarsis albidis. Abdomen nigrum, superne piceum. Ultimum segmentum ventrale transverse quadratum. Lamina supra-analis trigonalis, minute incisa.

Long. cum elytr. 8·5; elytr. 6·25, pronot. 2, latit. pronot. 2 millim.

Hab. Panama, Bugaba, at an altitude of from 800 to 1500 feet (*Champion*).

4. **Hypnorna (Calhypnorna) amœna,** sp. n. (*Hypnorma amœna*, Tab. III. figg. 14, 15.)

♀. *H. pulchellæ* simillima, fulvo-rufida. Antennæ ut in specie laudata pictæ sed articulis 1°–3° rufidis. Pronoti et elytrorum margo lateralis albidus. Pedes anteriores et intermedii lutei, coxis rufis; femora anteriora et tibiæ basi rufa; pedes posteriores rufi, tarsis, trochanteribus et femoribus basi luteis, femoribus fusco-umbratis. Abdomen rufum. Alæ fuscæ, purpureo-nitentes, margine anteriore aurantio. Ultimum segmentum ventrale longum, pentagonale, margine apicali angulato, truncato.

Long. cum elytr. 9; elytr. 6·5, pronot. 2, latit. pronot. 2 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

Tribus PANCHLORINÆ.

Panchloridæ, Brunner de Wattenwyl, Syst. Blatt. p. 266.
Nauphœtiens et ***Zétoboriens,*** Saussure, Mém. Mex., Blatt. pp. 185, 209.
Panchloriens, Saussure, Mélang. Orthopt. i. 2ᵉ fasc. p. 95.
Panchlorites, Saussure, Miss. Scient. Mex., Orthopt. p. 100.

Synopsis generum.

1. Femora 2ª, 3ª spina geniculari armata (subtus margine anteriore spina apicali instructa. Uterque sexus alatus; vena media alarum integra). Pronotum haud cucullatum. Larvæ formam imaginum præbentes.
   2. Pronotum posterius supra scutellum productum, arcuatum vel rotundato-angulatum.
      3. Femora 2ª, 3ª spina geniculari majuscula armata. Caput prominulum. Femora intermedia subtus in utroque margine spina apicali instructa. Elytra multivenosa.
         4. Pronotum deplanatum, parum nitidum, margine posteriore triangulato, in medio parum productum, valde obtusangulum. Elytrorum venæ campi discoidalis et analis numerosissimæ, inter se æquales. Femora posteriora subtus margine antico, anteriora margine postico, spina apicali instructa. Color fulvescens.—RHYPAROBIA, Kr.
         44. Pronotum corneum, nitidum, utrinque deflexum, postice rotundato-angulato-productum. Elytra minus dense venosa; campo discoidali venis spuriis inter venas principales instructo; campo anali in lineis duplicibus inter venas punctatum. Femora omnia subtus in utroque margine spina apicali instructa. Color obscurus.—LEUCOPHÆA, Br.
      33. Femora 2ª, 3ª spina geniculari minima armata, frequenter deficiente. Elytra plus minus membranacea, venis minus numerosis instructa.
         4. Pronotum margine anteriore quam posteriore magis arcuato, utrinque deflexum, postice rotundato-angulatum. Caput prominulum vel haud umbraculatum. Femora 2ª, 3ª subtus in utroque margine, anteriora in margine postico, spina apicali minuta instructa. Color luteus, rarius fusco-marmoratus.—PANCHLORA, B.
         44. Pronotum margine posteriore quam anteriore magis arcuato, utrinque haud deflexum. Femora omnia subtus spina apicali nulla (postica in medio margine postico spina armata). Insecta pallide picta.—ACHROBLATTA, Sss.
   22. Pronotum posterius truncatum, scutellum liberans, utrinque deflexum, anterius caput liberans. Femora omnia subtus in utroque margine spina apicali instructa, alteræ utræ tamen frequenter deficientes.—NAUPHŒTA, B.

11. Femora 2ª, 3ª spinis apicalibus nullis. Pronotum cucullatum, utrinque haud deflexum. Larvæ deplanatæ, ellipticæ, latæ.
    2. Pronotum transversum, planum, postice truncatum, antice subcucullatum, caput liberans. Femora omnia spinis apicalibus destituta.—[PHILOBORA, Br.]
    22. Pronotum postice arcuatum, cucullatum, caput superans. Elytra lata, margine costali arcuato, apice late rotundata. Uterque sexus alatus*.
        3. Pronotum margine anteriore quam posterior magis arcuato.
            4. Pronotum gibberosum, margine postico ad humeros utrinque angulato, margine antico frequenter bisinuato. Femora anteriora subtus margine postico frequenter spinula apicali instructa.—ZETOBORA, B. (*Phortiœca*, Sss.).
            44. Pronotum planulum, semiorbiculare, margine postico transverso. Femora anteriora subtus margine antico frequenter spinula instructa.—[TRIBONIDIUM, Sss.]
        33. Pronotum transverse rhomboidale, utrinque acutangulum. Femora omnia apice inermia.
            4. Pronotum et elytra ut solitum glabra; pronoti anguli fissi.—[SCHIZOPILIA, Sss.]
            44. Pronotum et elytra pubescentia, velutina; pronoti anguli integri.—CAPUCINA, Sss.

RHYPAROBIA, Krauss.

Rhyparobia, H. Krauss, Zool. Anzeiger, xv. p. 165 (1892).

Corpus deplanatum, griseum. Antennæ crassiusculæ; oculi in utroque sexu remoti. Pronotum deplanatum, margine posteriore quam anterior fere æque arcuato, triangulato, marginibus lateralibus parum deflexis. Elytrorum vena discoidalis distincta, fere ad medium longitudinem venæ humerali contigua; vena media ramosa; venæ campi discoidalis et analis numerosissimæ (quia venæ spuriæ venis normalibus similes sunt). Alarum vena media venæ ulnari propinqua. Lamina supra-analis cornea, ♀ trapezina, parum prominula. Femora 2ª, 3ª spina apicali superiore instructa; femora anteriora subtus margine postico, intermedia in utroque margine, posteriora in margine antico, spina apicali instructa.

1. **Rhyparobia maderæ**, Fabr. et auctt.

Hab. Orbem totum inter latitudines calidas.—MEXICO, State of Jalisco (*Schumann*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*).—ANTILLES, Cuba; BRAZIL (*Mus. Genavense*).

LEUCOPHÆA, Brunn. de W.

Leucophæa, Brunner de W. Syst. Blatt. p. 272 (1865) (subgenus); Orthopt. of St. Vincent, in P. Z. S. 1892, p. 205; Saussure, Miss. Scient. Mex., Orthopt. p. 101 (subgenus).

Color fuscus. Oculi invicem valde remoti; pronotum corneum, remote punctatum, utrinque deflexum, margine posteriore producto, rotundato-angulato. Elytra coriacea; campus discoidalis venis crassis 6–7, necnon inter illas venis spuriis instructus; campus analis venis sat numerosis punctatis, per pares ordinatis, impletus. Alarum vena media intermedia. Lamina supra-analis cornea, haud prominula, ♀ arcuata. Femora crassa, 2ª, 3ª apice spina geniculari majore instructa; femora anteriora subtus margine postico, intermedia et posteriora utrinque spina apicali instructa.

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* In genere australico *Oniscosoma* feminæ sunt apteræ.

1. **Leucophæa surinamensis,** Linn.

Blatta surinamensis, Linn. Syst. Nat. 12th ed. i. 2, p. 687. 3, et auctt.

Panchlora surinamensis, Burm. Handb. ii. p. 507. 5; Sauss. Mém. Mex., Blatt. p. 188. 87; Miss. Scient. Mex., Orthopt. p. 101. 1; Brunn. de W. Syst. Blatt. p. 278. 12.

Blatta indica, Fabr. Ent. Syst. ii. p. 8. 10, et auctt.

Pycnoscelus obscurus, Scudd. Bost. Journ. Nat. Hist. vii. p. 424 (larva).

Hab. Mexico; Central America.—Orbem totum inter latitudines calidas.

PANCHLORA, Burm.

Panchlora, Burmeister et auctt. (ex parte).

Color pallide prasinus, elytris et alis hyalino-thalassinis; vel brunnescens, rare fusco-irroratus. Oculi invicem propinqui vel modice remoti. Pronotum corneum, lævigatum, postice strigatum (disco rare punctato), utrinque deflexum; marginibus subreflexis, frequenter hyalinis, dense punctatis. Elytrorum vena discoidalis tantum ultra medium a vena humerali sejuncta; vena media indivisa, vena ulnaris in ramis parallelis 4–6 divisa, venis spuriis inter illas nullis. Campi analis venæ parum numerosæ. Lamina supra-analis coriacea, incisa, frequentius prominula. Femora gracilia; anteriora apice mutica; 2ª, 3ª spina geniculari minuta (frequenter deficiente) armata; intermedia subtus margine postico, posteriora margine antico, spinula apicali instructa.

Most of the species of this genus are of a milk-white colour, with a greenish tint, like that of clear sea-water (*thalassina*). The lateral margins of the pronotum and the basal costal area of the elytra are more or less transparent, margined at their inner borders with a white opaque band. In dried specimens the greenish tint is often lost and replaced by a pale fulvous colour; and the white bands of the sides of the pronotum and elytra sometimes become rufous or reddish. Other species are not greenish, and their white colour is shaded with a brown tint, sometimes very slight, sometimes more pronounced on the elytra. In a few cases the pronotum is marbled with brown.

The milky-greenish species are very difficult to separate, and some of them remain uncertain, owing to the inconstancy and uncertainty of the details of most of their characters.

To determine the species of this genus particular attention should be paid to the following points:—

1. The distance between the eyes on the vertex in the ♀ and in the ♂ (somewhat variable).
2. The coloration of the antennæ: with or without a black stump (subject to become pale or small).
3. The length of the supra-anal plate ♀: produced beyond the last ventral segment, or not (this may be a result of the mobility of the plate?).
4. The form of the supra-anal plate ♂: (*a*) produced and bilobate; (*b*) short, transverse, broadly subsinuated, and rounded on each side.
5. The form of the last ventral segment ♀: produced and arcuated; not produced; truncate; or emarginate. (Always somewhat, and perhaps occasionally very, variable.)
6. The number and position of the small black dots on the elytra in certain species: these are very

fixed as regards their position, but one or the other may be accidentally wanting. The dots are disposed as follows : (*a*) two typical dots beyond the middle—one on the furcation of the discoidal vein, the other more distal on the median vein ; (*b*) a dot on the principal vein (vena humeralis) near the base of the elytra ; (*c*) 1–4 small spots between the branches of the ulnar veins at the base of the ulnar areas, at a short distance from the anal vein. There is also often a black line on each side of the pronotum, and sometimes one on the anal vein.

These characters appear to be somewhat variable, but they are the only ones we have been able to use to distinguish the lacteous species ; it is therefore not improbable that the number of species here catalogued may have to be reduced when more specimens of some of them are available for examination.

The genus *Panchlora* seems to be exclusively American, but its species are very cosmopolitan, being spread over the warm parts of the continent, and are likely to become more widely distributed by being carried in merchandise from one country to another. For this reason, and also on account of the great resemblance of some of the species, we are obliged to enumerate them all.

Synopsis specierum.

I.

1. Pronoti discus lævigatus, vel impressionibus obsoletis notatus.
   a. Species lacteo-virescentes (thalassinæ), elytris subhyalinis, vel basi coriaceis, in desiccatis frequenter cano-fulvescentes.
      b. Antennæ luteæ (vel in desiccatis rufescentes).
         c. Elytra immaculata.
            d. Ultimum segmentum ventrale ♀ distincte incisum.
               e. Lamina supra-analis ♀ ultimum segmentum ventrale vix superans.
                  f. Pronoti margines pellucentes. Vertex inter oculos plus minus angustus.
                     g. Oculi in vertice fere eorum latitudine distantes. Ultimum segmentum ventrale ♀ leviter sinuatum. Statura minor.—1. *thalassina*, sp. n.
                     gg. Oculi in vertice maxime propinqui. Ultimum segmentum ventrale ♀ incisum, bilobatum ; ♂ lamina supra-analis prominula, valde trigonali-incisa.—2. *exoleta*, B.
                  ff. Pronoti margines et elytrorum margo costalis opaci. Oculi invicem remoti. (Elytra sat coriacea.)—[3. *glauca*, Sss.] ; [(? 4. *antillarum*, Sss.)].
               ee. Lamina supra-analis ♀ prominula, bilobata.
                  f. Oculi ♀ eorum latitudine remoti.—1. *thalassina*, sp. n.
                  ff. Oculi magis approximati.—5. *virescens*, Th.
            dd. Ultimum segmentum ventrale ♀ haud incisum.
               e. Minuta. Oculi subcontigui. (Ultimum segmentum ventrale ♀ truncatum. Lamina supra-analis ♂ haud prominula.)—[6. *viridis*, B.]

ee. Majores. Oculi sensim remoti.

f. Ultimum segmentum ventrale ♀ truncatum vel subsinuatum. Oculi plus quam eorum latitudine remoti. Campus marginalis elytrorum dense impresso-punctatus.—[7. *prasina,* B.]

ff. Ultimum segmentum ventrale ♀ arcuatum. Oculi ♀ eorum latitudine remoti, ♂ subcontigui. Campus marginalis elytrorum valde areolatus, in areolis grosse punctatus. (Lamina supra-analis ♂ prominula, bilobata.)—8. *acolhua,* sp. n.

cc. Elytra punctis minutis nigris notata;

d. punctis nigris prope venam analem nullis;

e. puncto unico ultra medium elytrorum:

f. in vena media posito.

g. Ultimum segmentum ventrale ♀ apice sinuatum. Oculi ♀ valde propinqui, ♂ contigui.—9. *peruana,* Sss.

gg. Ultimum segmentum ventrale ♀ apice arcuatum. Oculi ♀ eorum latitudine distantes.—[10. *nivea,* L.]

ff. in vena discoidali posito.—11. *punctum,* sp. n.

ee. punctis 2–3:

f. punctis 2 typicis ultra medium, 1 in furca venæ discoidalis, 1 magis distalis in vena media. Oculi remoti. Antennæ annulo nigro.

g. Species thalassina. Lamina supra-analis prominula.—12. *hyalina,* Sss.

gg. Species fulvescens vel brunnescens. Vena humeralis basi fusca. Lamina supra-analis vix prominula.—(19. *montezuma,* sp. n.)

ff. punctis 3: primo prope basin venæ humeralis, 2 ultra medium ut in *P. hyalina* positis. Pronotum utrinque linea nigra.—[13. *moxa,* Sss.]

dd. punctis nigris pone venam analem ad basin arearum ulnarium alterisque 2 typicis ultra medium:

e. pone venam analem punctis 1–2. Pronotum et elytra haud nigro-lineata.

f. Elytra punctis typicis 2 ut in *P. hyalina* positis, puncto nullo in vena humerali. Oculi ♀ propinqui, ♂ subcontigui. Lamina supra-analis ♀ ♂ prominula, bilobata.—14. *fraterna,* sp. n.

ff. Elytra puncto nigro insuper in vena humerali. Oculi haud subcontigui. Lamina infra-genitalis ♂ sinuata, bilobata.—15. *lancadon,* Sss.

ee. pone venam analem punctis 3, nonnunquam plus minus obliteratis. Pronotum utrinque et vena analis nigro-lineata. Lamina supra-analis ♀ valde prominula. Oculi ♀ remoti.

f. Media. Elytra puncto prope basin in vena humerali, alteris 2 ut solitum ultra medium; campus analis apice subacutus.—16. *pulchella,* B.

ff. Major. Elytra linea nigra in apice venæ discoidalis; campus analis apice obtusus, fere rectangulus.—17. *zendala,* Sss.

bb. Antennæ nigræ, basi et annulo ante apicem luteis.—[18. *najas,* Dohrn.]

aa. Species lacteo-brunnescentes, elytris abdomineque plus minus infuscatis, vel fusco-variæ.

b. Pronotum albido-brunnescens.

c. Sat parva, leviter brunnescens.—19. *montezuma,* sp. n.

cc. Media; elytris basi brunnescentibus.

d. Elytra ultra medium punctis 2 typicis nigris. Oculi ♀ eorum latitudine remoti. —20. *azteca,* Sss.

dd. Elytra nigro-multipunctata. Oculi maxime remoti.—21. *latipennis,* sp. n.

bb. Pronotum fusco-marmoratum.—22. *tolteca,* Sss.

11. Pronoti discus cribroso-punctatus. Elytra hyalina, subtiliter fusco-irrorata.—23. *cribrosa,* sp. n.

II.

a. Antennæ fuscæ vel nigræ, ante apicem annulo luteo.—18. *najas*; 21. *latipennis*?

aa. Antennæ luteo-virescentes vel rufescentes:

b. annulo nigro vel fusco ultra medium.—8. *acolhua*; 12. *hyalina*; 14. *fraterna*; 16. *pulchella*; 19. *montezuma*; 22. *tolteca*; 23. *cribrosa.*

bb. annulo fusco nullo.—1. *thalassina*; 2. *exoleta*; 5. *virescens*; 6. *viridis*; 9. *peruana*; [10. *nivea.*]

bbb. incomplete cognitæ.—[3. *glauca*]; [4. *antillarum*]; [7. *prasina*]; [13. *moxa*]; 15. *lancadon*; 17. *zendala*; 20. *azteca.*

III.

a. Pronotum utrinque linea nigra.—[13. *moxa*]; 16. *pulchella*; 17. *zendala*; [18. *najas*]; 20. *azteca*; 21. *latipennis*; 22. *tolteca.*

aa. Pronotum haud nigro-lineatum: *reliquæ species.*

IV.

a. Alæ latæ, obtusæ, compo anteriore latissimo, ramis ulnaribus apicalibus 6.—20. *azteca*; 22. *tolteca.*

aa. Alæ minus obtusæ, campo anteriore angustiore: *reliquæ species.*

1. **Panchlora thalassina,** sp. n.

Media. Margines laterales pronoti pellucidi vel irregulariter virescentes. Area marginalis elytrorum parum grosse punctata. Elytra immaculata.—♀. Oculi eorum latitudine remoti. Lamina supra-analis prominula, parum profunde bilobata. Ultimum segmentum ventrale apice incisum, sinuatum.—♂. Minor. Oculi triente eorum latitudine distantes.

♀. Long. 16–21; elytr. 15–20, pronot. 5–6, latit. pronot. 6–6·6 millim.

♂. Long. 12·5; elytr. 15·5, pronot. 4·25, latit. pronot. 4·5 millim.

Hab. GUATEMALA.—BRAZIL, Santa Catharina; ARGENTINE REPUBLIC, La Plata (*Mus. Genavense*).

2. **Panchlora exoleta,** Burm.

Panchlora exoleta, Burm. Handb. ii. p. 507; Brunn. de W. Syst. Blatt. p. 272. 1; Sauss. Miss. Scient. Mex., Orthopt. p. 101.

♀. Vertex inter oculos tertia parte latitudinis oculorum æqualis. Lamina supra-analis haud prominula.

Ultimum segmentum ventrale incisum, nonnunquam trigonali-incisum.—♂. Statura feminarum. Oculi invicem magis approximati. Lamina supra-analis prominula, fortiter trigonali-incisa.

♀. Long. 19·5; elytr. 21·5, pronot. 5·75, latit. pronot. 7·2 millim.

♂. Long. 14·5–17·5; elytr. 17·5–20·5, pronot. 4·75–5·5, latit. pronot. 5·25–6·5 millim.

Hab. MEXICO, Eastern Cordillera; GUATEMALA.—ANTILLES, Cuba; BRAZIL (*Mus. Genavense*).

[3. **Panchlora glauca,** Sauss.

Panchlora glauca, Sauss. Rev. et Mag. de Zool. 1862, p. 231; Mém. Mex., Blatt. p. 200. 103; Miss. Scient. Mex., Orthopt. p. 102. 6; Brunn. de W. Syst. Blatt. p. 274.

♀. Oculi plus quam eorum latitudine remoti; pronoti et elytrorum margines laterales opaci. Lamina supra-analis vix prominula, profunde incisa. Ultimum segmentum ventrale late incisum, bilobatum.

Long. 20; elytr. 22·5, pronot. 6·5, latit. pronot. 7·25 millim.

Hab. BRAZIL (*Mus. Genavense*).]

[4. **Panchlora antillarum,** Sauss.

Panchlora antillarum, Sauss. Rev. et Mag. de Zool. 1862, p. 230 (♀); Mém. Mex., Blatt. p. 193. 92; Miss. Scient. Mex., Orthopt. p. 102. 7; Brunn. de W. Syst. Blatt. p. 275. 5.

♀. Oculi eorum latitudine remoti. Pronotum postice angulatum, marginibus lateralibus sat opacis. Elytra et alæ breviora. (Abdomen?)

Long. cum elytr. 21; elytr. 16·5, pronot. 5·5, latit. pronot. 7 millim.

Hab. ANTILLES, Cuba (*Mus. Genavense*).

The type is imperfect, being without abdomen. The species is much like *P. glauca,* but smaller, with shorter elytra.]

5. **Panchlora virescens,** Thunb.

Blatta virescens, Thunb. Mém. Acad. Sci. St. Pétersb. x. p. 278; Serv. Orthopt. p. 101. 26.

Panchlora virescens, Guérin, in Ramon de la Sagra's Hist. Nat. de Cuba, Ins. p. 344; Sauss. Mém. Mex., Blatt. p. 190. 89.

Statura media. Elytra immaculata, area costali parum grosse punctata.—♀. Oculi triente eorum latitudine remoti. Lamina supra-analis prominula. Ultimum segmentum ventrale in medio sinuatum, subbilobatum vel tantum sinuato-truncatum.—♂ quam ♀ minor. Oculi maxime approximati. Lamina supra-analis brevis, transversa, sinuato-truncata.

♀. Long. 18–21; elytr. 18·5–21, pronot. 5–6, latit. pronot. 6–7 millim.

♂. Long. 14; elytr. 14·6, pronot. 4·5, latit. pronot. 5·5 millim.

Hab. MEXICO.—ANTILLES, Cuba; GUIANA, Cayenne; BRAZIL (*Mus. Genavense*).

This species resembles *P. exoleta,* but the males are much smaller and have a very differently-shaped supra-anal plate.

[6. **Panchlora viridis,** Burm.

Panchlora viridis, Burm. Handb. ii. p. 506. 1.

Blatta nivea, Herbst, in Fuessly's Arch. p. 185, t. 49. fig. 8; Thunb. Mém. Sci. Acad. St. Pétersb. x.

p. 276; Serville, Orthopt. p. 101. 27; Sauss. Mém. Mex., Blatt. p. 194. 95 (♀); Miss. Scient. Mex., Orthopt. p. 102. 2 (nec Linn.).

Panchlora poeyi, Sauss. Rev. et Mag. de Zool. 1862, p. 230; Mém. Mex., Blatt. p. 194. 94 (♂).

Species minima generis, ♀ ♂ statura *P. peruanæ* et *virescenti* ♂; oculis ♀ subcontiguis, ♂ contiguis. Lamina supra-analis ♀ prominula, ♂ brevis transversa. Ultimum segmentum ventrale ♀ truncatum.

♀. Long. 15; elytr. 14, pronot. 4, latit. pronot. 5 millim.

♂. Long. 11·75; elytr. 14, pronot. 3·8, latit. pronot. 4·6 millim.

Hab. ANTILLES, Cuba; SOUTH AMERICA, Cayenne (*Mus. Genavense*)].

[7. **Panchlora prasina,** Burm.

Panchlora prasina, Burm. Handb. ii. p. 507. 3; Sauss. Mém. Mex., Blatt. p. 192. 90; Miss. Scient. Mex., Orthopt. p. 102. 4; Brunn. de W. Syst. Blatt. p. 273. 3.

♀. Magna. Vertex inter oculos plus quam eorum latitudine remoti. Elytrorum margo costalis grosse punctatus. Ultimum segmentum ventrale apice truncatum, frequenter biangulatum. Lamina supra-analis prominula.

♀. Long. 26·5; elytr. 29, pronot. 8, latit. pronot. 9·3 millim.

Hab. BRAZIL (*Mus. Genavense*).]

8. **Panchlora acolhua,** sp. n.

♀. Media. Antennæ ultra medium articulis 2–3 fuscis. Oculi eorum latitudine vel paulo minus, remoti. Margines laterales pronoti et elytrorum viridi-opaco-irrorati; elytrorum area marginalis grosse punctata et areolato-reticulata. Lamina supra-analis ♀ ♂ prominula, bilobata. Ultimum segmentum ventrale ♀ arcuatum vel subtruncatum.

Long. 22·5; elytr. 23, pronot. 7, latit. pronot. 9 millim.

Hab. MEXICO, State of Guerrero (*H. H. Smith*).

Var. Paulo minor; oculis ♀ leviter propioribus, ♂ invicem valde propinquis.

♀. Long. 18–20; elytr. 21·5, pronot. 5·6, latit. pronot. 7 millim.

♂. Long. 13·5; elytr. 17, pronot. 4, latit. pronot. 5·5 millim.

Hab. GUATEMALA, Capetillo (*Champion*).

Var. *minor*: vertex inter oculos dimidia latitudine oculorum latus vel paulo latior. Statura *P. viridi* paulo major. 2 ♀.

Long. 17; elytr. 17·5, pronot. 5, latit. pronot. 6 millim.

Hab. PANAMA, Bugaba (*Champion*).

9. **Panchlora peruana,** Sauss.

Panchlora peruana, Sauss. Rev. et Mag. de Zool. 1864, p. 342. 52; Mém. Mex., Blatt. p. 195. 95; Miss. Scient. Mex., Orthopt. p. 102. 3.

Elytra puncto typico unico ultra medium in vena media.— ♀. Oculi invicem valde propinqui. Lamina supra-analis prominula, bilobata. Ultimum segmentum ventrale sinuatum.— ♂. Minutus, staturæ *P. viridis*; oculis subcontiguis vel contiguis. Lamina supra-analis brevis, late incisa.

Varr. *a.* Vertex inter oculos 4^{am} partem latitudinis oculorum æquans.—*b.* Oculis magis distantibus. Vertex dimidiam latitudinem oculorum fere æquans (Yucatan).—*c.* Oculi maxime approximati.

♀. Long. 16–21; elytr. 17·5–21·5, pronot. 4·6–5·6, latit. pronot. 6–7 millim.

♂. Long. 12·5–15·5; elytr. 12·75–17·5, pronot. 3·75–4·6, latit. pronot. 4·6–5·6 millim.

Hab. Mexico, Cordova (*Mus. Genavense*), Atoyac in Vera Cruz (*Schumann*), Teapa in Tabasco (*H. H. Smith*), Temax in Yucatan (*Gaumer*); British Honduras, Belize, R. Sarstoon (*Blancaneaux*); Guatemala, Cahabon and San Juan in Vera Paz, Zapote, El Reposo (*Champion*); Costa Rica, Caché (*Rogers*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Antilles, Cuba; Guiana, Cayenne; Peru (*Mus. Genavense*).

This species is characterized by having a single black dot on the distal third of the vena media of the elytra.

[10. **Panchlora nivea,** Linn.

Blatta nivea, Linn. Syst. Nat. 12th ed. i. 2, p. 688. 5; Drury, Illustr. Exot. Ins. ii. t. 36. fig. 1.
Panchlora nivea, Brunn. de W. Syst. Blatt. p. 274. 4; Sauss. Miss. Scient. Mex., Orthopt. p. 102. 5.
Blatta viridis, Fabr. Syst. Ent. p. 272. 9.
Panchlora luteola, Sauss. Rev. et Mag. de Zool. 1864, p. 342. 53.

♀. Oculi plus quam eorum latitudine distantes. Elytra puncto nigro minimo in vena media ut in *P. peruana*. Lamina supra-analis prominula. Ultimum segmentum ventrale apice arcuatum.
♀. Long. 20; elytr. 23, pronot. 5, latit. pronot. 7 millim.

Hab. Antilles, Cuba; Venezuela; Brazil (*Mus. Genavense*).]

11. **Panchlora punctum,** sp. n.

Statura media. Oculi fere plus quam eorum latitudine remoti. Pronoti et elytrorum margo lateralis opacus, illo ad margines utrinque valde sulcato. Elytra puncto typico unico in vena discoidali. Abdomen?
Long. cum elytr. 26; elytr. 21, pronot. 6·5, latit. pronot. 8 millim.

Hab. Central America (*Mus. Genavense, ex coll. Guérin*).

12. **Panchlora hyalina,** Sauss.

Panchlora hyalina, Sauss. Rev. et Mag. de Zool. 1862, p. 231*; Miss. Scient. Mex., Orthopt. p. 102. 8; Brunn. de W. Syst. Blatt. p. 275. 6.

Antennæ ultra medium annulo nigro. Elytra ultra medium punctis typicis 2 consuetis nigris ornata: unum in vena discoidali, alterum in vena media. Pronoti margines et elytrorum area costalis viridi-opaco-tessellata.— ♀. Oculi eorum latitudine remoti. Lamina supra-analis prominula. Ultimum segmentum ventrale truncatum.— ♂. Oculi paulo magis propinqui.
Var. *a.* Elytra puncto nigro unico. (A *P. peruana* differt oculis magis distantibus.)
♀. Long. 16·5; elytr. 18, pronot. 5·5, latit. pronot. 6·6 millim.
♂. Long. 14; elytr. 14·5, pronot. 4·5, latit. pronot. 5·73 millim.

Hab. Guatemala.—Cuba (*Mus. Genavense*).

[13. **Panchlora moxa,** Sauss.

Panchlora moxa, Sauss. Rev. et Mag. de Zool. 1862, p. 231 (♂); Mém. Mex., Blatt. p. 199. 102; Miss. Scient. Mex., Orthopt. p. 103. 10; Brunn. de W. Syst. Blatt. p. 276. 9.

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* The diagnosis of the elytra contains an error. There is no black dot near the base on the white humeral band, and there are not numerous black dots in the distal part; these marks are due to some dust on the elytra of the specimen described.

♂. Oculi invicem valde propinqui. Pronoti margines laterales subopaci, linea intramarginali nigra. Elytra punctis nigris 4, typicis 2 ultra medium, ultimo majore; altero ante medium in vena discoidali, alteroque ad basin campi analis, venæ anali haud contiguo. Lamina supra-analis bilobata.
Long. 14·5; elytr. 18·5, pronot. 5·5, latit. pronot. 6·25 millim.

Hab. BOLIVIA; PERU (*Mus. Genavense*).]

14. **Panchlora fraterna,** sp. n.

P. hyalinæ simillima; oculis minus remotis, ♀ dimidio eorum latitudine distantes, ♂ subcontigui. Elytra punctis nigris 3, typicis 2 ultra medium, necnon 1 pone venam analem. Elytrorum area marginalis areolis translucidis obsita. Lamina supra-analis ♀ ♂ prominula, bilobata. Ultimum segmentum ventrale ♀ apice truncatum.
♀. Long. 16·5; elytr. 17, pronot. 5, latit. pronot. 6 millim.
♂. Long. 15·25; elytr. 16·5, pronot. 4·5, latit. pronot. 5·5 millim.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

15. **Panchlora lacandon,** Sauss.

Panchlora lancadon, Sauss. Rev. et Mag. de Zool. 1864, p. 342. 54 (♂) (nec ♀); Mém. Mex., Blatt. p. 194. 96, fig. 29; Miss. Scient. Mex., Orthopt. p. 103. 9.

♂. Statura media. Oculi eorum triente latitudine remoti. Margines laterales pronoti pellucidi. Elytra punctis nigris 4 ut in *P. moxa* exsertis. Lamina supra-analis prominula, bilobata; lamina infra-genitalis sinuata, bilobata.
♂. Long. 20; elytr. 22, pronot. 6, latit. pronot. 7·75 millim.

Hab. GUATEMALA (*Mus. Genavense*).

Allied to *P. moxa*, but with the lateral margins of the pronotum more transparent and without black line, and the eyes more distant.

16. **Panchlora pulchella,** Burm.

Blatta 4-punctata, Stoll, Kakkerl. t. 4. fig. 19.
Panchlora pulchella, Burm. Handb. ii. p. 507. 4; Brunn. de W. Syst. Blatt. p. 275. 7. fig. 31; Sauss. Miss. Scient. Mex., Orthopt. p. 103. 11.
Panchlora mexicana, Sauss. Rev. et Mag. de Zool. 1862, p. 231; Mém. Mex., Blatt. p. 197. 100.

Vertex inter oculos nigro-notatus. Antennæ annulo nigro ultra medium. Pronoti margines laterales hyalini, linea intramarginali nigra. Elytra punctis plurimis nigris: typicis 2 ultra medium necnon 3° ad ultimum apposito vel 3–4 minutis in vena media; altero ante medium in vena discoidali (frequenter deficiente) necnon 1–4 pone venam analem lineaque nigra in basi venæ analis plus minus elongata. Lamina supra-analis ♀ ♂ prominula, bilobata.
♀. Oculi dimidio eorum latitudine remoti. Ultimum segmentum ventrale apice subsinuatum.
♂. Oculi subcontigui. Lamina infra-genitalis truncata.
♀. Long. 21; elytr. 21·5, pronot. 6·5, latit. pronot. 8·2 millim.
♂. Long. 15; elytr. 17, pronot. 5·5, latit. pronot. 6·2 millim.

Hab. MEXICO, Cordova (*Mus. Genavense*), Atoyac in Vera Cruz (*Schumann*).

In some specimens of this species the distal part of the elytra is irregularly marked with numerous very small black dots.

17. **Panchlora zendala,** Sauss.

Panchlora zendala, Sauss. Rev. et Mag. de Zool. 1862, p. 231; Mém. Mex., Blatt. p. 196. 99, fig. 30; Miss. Scient. Mex., Orthopt. p. 103. 13; Brunn. de W. Syst. Blatt. p. 276. 8.

♀. Valida. Oculi $\frac{2}{3}$ eorum latitudine distantes. Vertex inter illos nigro-maculatus. Pronoti margines laterales semiopaci, linea intra-marginali nigra. Elytrorum margo costalis subopacus. Elytra ultra medium in vena discoidali linea nigra interrupta necnon punctis 1–2 in vena media; pone venam analem punctis 1–3, lineaque in basi venæ anali nigra. Lamina supra-analis prominula. Ultimum segmentum ventrale apice sinuatum.

Long. 25; elytr. 29, pronot. 8·2, latit. pronot. 10 millim.

Hab. GUATEMALA, Yzabal (*Mus. Genavense, ex coll. Guérin*).

A large species, of the size of *P. prasina.*

[18. **Panchlora najas,** Dohrn.

Panchlora najas, H. Dohrn, Stett. ent. Zeit. 1888, p. 130.

♀. Glauco-flavescens; antennæ nigræ, articulis 2 basalibus annuloque subapicali lato pallidis; oculi nigri, valde approximati; verticis fascia rufa transversa in margines laterales pronoti et costales elytrorum continuata; vitta pronoti intus tenuissime nigro-marginata, vitta elytrorum intus fascia æque lata nigro et lacteo varia duplicata; alarum area costali viridi-flava; pedibus pallidis.

Long. 22; elytr. 22, pronot. 8 millim.

Hab. UPPER AMAZONS, Fonteboa (*coll. Dohrn*).]

19. **Panchlora montezuma,** sp. n.

♀. Minuta, statura *P. viridis* vel paulo major; fulvo-testacea, leviter brunnescens. Vertex inter oculos niger, ♀ ♂ quam oculorum latitudine paulo angustior. Antennæ rufescentes, annulo longo nigro. Pronotum fulvescens vel flavicans, postice striatum, punctis 2 disci brunneis; margines laterales pronoti et elytrorum semi-diaphani, punctati; vitta albida opaca laterali pronoti nulla. Elytra leviter fulvo-brunnescentia; vena humerali basi vel partim fusca necnon linea angusta albida campi antici ad illam posita. Pars distalis punctis 2 typicis nigris. Alæ vitreæ, venis testaceis, campo marginali ultra medium vitta media brunnescente, obsoleta; vitta albido-opaca nulla. Pedes testacei. Abdomen brunnescens, saltem supra.—♀. Lamina supra-analis vix prominula, rotundato-bilobata. Segmentum ventrale ultimum subtruncatum. —♂. Lamina supra-analis minus bilobata, parum prominula; lamina infra-genitalis sinuata.—Anne in vivis color plus minus virescens?

♀. Long. 14; elytr. 15, pronot. 4·5, latit. pronot. 5·5 millim.

♂. Long. 13·5; elytr. 13, pronot. 4·25, latit. pronot. 5·25 millim.

Hab. MEXICO, Presidio de Mazatlan (*Forrer*).

20. **Panchlora azteca,** Sauss.

Panchlora azteca, Sauss. Rev. et Mag. de Zool. 1862, p. 230; Mém. Mex., Blatt. p. 198. 101, fig. 31; Miss. Scient. Mex., Orthopt. p. 103. 14.

Panchlora lactea, Brunn. de W. Syst. Blatt. p. 277. 10 (var. *albida*).

♀. Albido-brunnescens. Vertex inter oculos paulum plus quam dimidia latitudo oculorum latus, nigro-maculatus. Pronoti margines laterales parum translucidæ, linea intra-marginali nigra. Elytra leviter, basi distincte brunnescentia, campo marginali pallido, ad basin vitta albida opaca latiuscula; ultra medium punctis typicis nigris 2; vena anali basi breviter nigra. Abdomen subtus castaneum; lamina supra-analis prominula. Ultimum segmentum ventrale apice truncatum vel transverse subarcuatum.

Long. 19·5; elytr. 22·5, pronot. 6·5, latit. pronot. 8 millim.

Hab. MEXICO, Cordova (*Saussure*).

21. **Panchlora latipennis,** sp. n. (Tab. V. fig. 2.)

♀. Crassa, fulvo-brunnescens. Antennæ, basi excepta, brunneæ. Caput subtus rufo-aurantium, supra flavescens, vertice inter oculos plus minus nigro. Oculi invicem maxime remoti. Pronotum fulvo-brunnescens, postice striolatum, marginibus lateralibus parum diaphanis, linea fusca intra-marginali obsoleta; margine posteriore obtusangulo, parum producto. Mesonotum in medio vitta nigra longitudinali. Elytra lata, brunnea, coriacea, tantum apice submembranacea; campo marginali pallidiore, ad basin vitta opaca albida, flavicante. Vena discoidali macula typica nigra, alterisque nonnullis; campo discoidali prope apicem punctis nigris numerosis consperso, inter illos puncto typico majore; ac pone venam analem maculis irregularibus 3–4; pars obtecta elytri dextri subhyalina, campi analis basis lutea. Alæ obtusæ, latæ, subhyalinæ, margine anteriore leviter brunnescente, in medio albido-opaco; campus anterior latissimus; vena ulnaris ramos apicales 5, abbreviatos 6–7 emittens. Pedes fulvo-testacei. Abdomen utrinque acute serratum, superne infuscatum, segmentis angustissime luteo-limbatis; subtus fuscum, in medio pallidius, marginibus late fulvo-testaceis. Lamina supra-analis margine posteriore triangulari incisa, parum prominula. Ultimum segmentum ventrale leviter truncatum.

Long. 19; pronot. 6·5, latit. pronot. 8; long. elytr. 18·5, latit. elytr. 7·5 millim.

Hab. GUATEMALA (*Mus. Genavense*).

22. **Panchlora tolteca,** Sauss. (Tab. VI. fig. 11.)

Panchlora tolteca, Sauss. Mélang. Orthopt. ii. 4e fasc. p. 131. 1 (♀) (1872).

♀. Infuscata. Antennæ rufescentes, annulo nigro. Vertex inter oculos quam eorum latitudine paulo angustior, nigrum. Pronoti elytrorumque margines laterales semipellucentes. Pronotum posterius crasse striolatum, castaneo- et luteo-marmoratum. Elytra fusco-nebulosa, ad basin fusca, campo marginali luteo. Alæ obtusæ, ut in *P. latipenni* venosæ, campo marginali haud opaco. Abdomen fuscum, marginibus haud serratis, angulis haud acutis, subtus castaneum. Lamina supra-analis prominula. Ultimum segmentum ventrale arcuatum, truncatum.

Long. 21; elytr. 21·5, pronot. 6, latit. pronot. 7·5 millim.

Hab. MEXICO, Eastern Cordillera (*Saussure*).

23. **Panchlora cribrosa,** sp. n. (Tab. V. fig. 1.)

♂. Sat minuta, lutea. Antennæ nigræ, ultra medium annulo albido (art. 6), dehinc nigræ (art. 7) dehinc iterum albidæ; (apice?). Vertex inter oculos angustus, niger. Pronotum totum punctatum, disco medio toto remote crasse cribroso, marginibus minus crasse ac densius punctatis; margine postico latiuscule strigato; margine anteriore fere semiorbiculari, antice haud truncato; margine posteriore leviter triangulato, postice vix angulatim producto, valde obtusangulato. Elytra et alæ hyalina. Elytrorum campus marginalis punctulatus, coriaceus, minus diaphanus; campus discoidalis et marginalis apice omnino fusco-punctulatus et subtiliter irroratus, vena discoidali prope basin punctis nonnullis majoribus fuscis; campo discoidali ad venam ulnarem punctis majoribus fuscis 5 irregularibus; campo anali ultra medium fusco-punctulato, basi ad venam analem maculis 2–3 fuscis. Alarum campus marginalis ultra medium serie punctorum fuscorum ornatus, subtus in medio albido-opaco-irroratus; vena ulnari ultra medium leviter fusco-punctata vel spurcata. Pedes testacei; coxis basi ad marginem exteriorem macula, anterioribus puncto, fuscis. Tibiæ ad spinas fusco-punctatæ; tarsi articulis apice supra fusco-notatis. Abdomen testaceum, segmentis frequenter utrinque puncto fusco, angulo postico haud producto; lamina supra-analis late sinuata, utrinque rotundata, haud prominula. Lamina infra-genitalis transversa, leviter arcuata.

Long. 15; elytr. 17, pronot. 4·75, latit. pronot. 6 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

A well-marked species, the only one of the genus which has the disc of pronotum cribrose with strong punctures. Very distinct also in its elytra being finely tessellated with brown.

ACHROBLATTA *, Sauss.

Achroblatta, Saussure, Societas Entomologica, 1893, p. 67.

Antennæ subgraciles. Caput minutum, planatum, obtectum vel vix prominulum, oculis modice remotis. Pronotum coriaceo-rugulosum, margine postico quam margo anticus multo magis arcuato, rotundato-producto; disco utrinque depresso; parte antica supra caput fornicata; marginibus lateralibus haud deflexis. Elytra et alæ sensim ut in genere *Panchlora* venosa. Elytra subcoriacea, dense punctulata, parallela, apice haud attenuata. Alæ apice rotundatæ. Femora subtus spina apicali nulla. Lamina supra-analis transverse quadrata, incisa vel bilobata.—Insecta picta, pallide colorata.

This genus approaches *Panchlora*, but differs from it in its smaller head, in the pronotum being widest before the middle, and in the middle and hind femora being without apical spines on their lower borders.

1. **Achroblatta luteola**, Blanch. (*Acroblatta luteola*, Tab. VI. fig. 12.)

Blatta luteola, E. Blanchard, in Voy. d'Orbigny, Ins. p. 215. 735, t. 26. fig. 3.

Paratropes histrio, Sauss. Rev. et Mag. de Zool. 1862, p. 229; Mém. Mex., Blatt. p. 58. 6, fig. 5 (1864).

Paratropa histrio, Sauss. Miss. Scient. Mex., Orthopt. p. 75. 5.

♀. Flavo-testacea. Antennæ fuscæ, basi fulvæ, annulo ultra medium flavido (art. 3–8). Vertex inter oculos quam oculi dimidio angustior (vel paulo latior). Pronotum fulvescens, subtiliter rugulosum, antice et postice strigatum, margine anteriore parum arcuato, in medio subtruncato; disco medio sulcis 2 antice divergentibus, maculisque 2 vel macula subpentagonali, brunneis. Elytra pallide griseo-brunnea: campi marginalis basis, macula elongata ante medium et parte apicali pallide ochraceis, necnon linea obsoletissima eodem colore secundum venam discoidalem; area costali ima basi fusco-rufescente. Alæ subhyalinæ, venis flavo-testaceis, campo posteriore leviter nebuloso. Campus anterior posteriorem parum superans, rotundatus, apice fuscus præcipue antice, costa flavicante, ultra medium albescente opaca. Abdomen supra infuscatum, marginibus pallidioribus; subtus vittis 2 fuscis in forma litteris **V** convergentibus. Lamina supra-analis prominula, fusca, angulo externo testaceo. Cerci apice fusci; ultimum segmentum ventrale truncatum.—*Var.* Antennæ annulis flavis duabus.

Long. 21; elytr. 21, pronot. 5·5, latit. pronot. 7·25 millim.

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba 800 to 1500 feet (*Champion*).—SOUTH AMERICA, Colombia (*Mus. Genavense*); BOLIVIA (*d'Orbigny*).

NAUPHŒTA, Burm.

Nauphœta, Burmeister, Brunn. de W., Saussure et auctt.

Phœtalia, Stål, Bihang till k. Svensk. Akad. Handl. 2, no. 13, p. 17.

Synopsis specierum.

a. Major, griseo-fulvescens. Femora omnia inermia. Pronotum utrinque vitta nigra. Abdomen pallide marginatum. Elytra (♀) abdomine paulo breviora.—1. *cinerea*, Oliv.

aa. Minores, fusciores. Femora subtus omnia spinis nonnullis armata; anteriora margine antico in medio spinis 3–4, dehinc spinulis minimis piliformibus, margine postico spinis 1–3 instructo; femora intermedia et postica in utroque margine spinis 2–3 armata. Pronotum fuscum, utrinque repande luteo-marginatum. Elytra fusco-testacea. Abdomen fuscum vel rufescens.—2. *lævigata*, Pal. Beauv.; [3. *circumvagans*, B.].

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* ἀχροος, pale; *Blatta*. Blatta of pale colour.

1. **Nauphœta cinerea,** Oliv.

Blatta cinerea, Oliv. Encyc. Méthod. iv. p. 314. 3; Serv. Orthopt. p. 89. 7; Brisout, Bull. Soc. Ent. Fr. 1848, p. xx.
Nauphœta cinerea, Sauss. Mém. Mex., Blatt. p. 204. 105; Miss. Scient. Mex., Orthopt. p. 104. 1.
Epilampra cinerea, Brunn. de W. Syst. Blatt. p. 182. 14.
Nauphœta grisea, Burm. Handb. ii. p. 508. 2; Brunn. de W. Syst. Blatt. p. 287. 4.
Nauphœta bivittata, Burm. loc. cit. p. 508. 3; Brunn. de W. loc. cit. p. 287. 5.

Hab. Mexico, Presidio de Mazatlan in Sinaloa (*Forrer*).—Antilles, Cuba; Brazil (*Mus. Genavense*).

2. **Nauphœta lævigata,** Pal. Beauv.

Blatta lævigata, Pal. de Beauv. Ins. d'Afr. et d'Amér. p. 228, t. 2 *c.* fig. 4; Serv. Orthopt. p. 98. 21; Sauss. Mém. Mex., Blatt. p. 99. 39, fig. 16.
Nauphœta lævigata, Sauss. Miss. Scient. Mex., Orthopt. p. 104. 2.
Nauphœta pallida, Brunn. de W. Syst. Blatt. p. 286. 3.

Hab. Mexico; Guatemala.—Antilles, Cuba (*Mus. Genavense*), San Domingo.

[3. **Nauphœta circumvagans,** Burm.

Nauphœta circumvagans, Burm. Handb. ii. p. 508; Miss. Scient. Mex., Orthopt. p. 104. 3.
Nauphœta lævigata, Brunn. de W. Syst. Blatt. p. 285. 2 (syn. exclus.).

Hab. Tropical America, Brazil, Antilles.—Insulæ africanæ.—Species circumvagans.]

[PHILOBORA, Brunn. de W.

Tribonium, Saussure, Mém. Mex., Blatt. p. 208 (1864).
Philobora, Brunner de Wattenwyl, Syst. Blatt. p. 294 (1865); Sauss. Miss. Scient. Mex., Orthopt. p. 107.

1. **Philobora conspersa,** Guér. & Perch.

Blatta conspersa, Guér. et Perch, Gen. des Ins. t. 2; Serville, Orthopt. p. 89. 6.
Zetobora conspersa, Burm. Handb. ii. p. 510; Guérin, in Ramon de la Sagra's Hist. Nat. de Cuba, Ins. p. 339 (♀ ♂).
Philobora conspersa, Brunn. de W. Syst. Blatt. p. 295. 1, fig. 35; Sauss. Miss. Scient. Mex., Orthopt. p. 108. 1.

Hab. Antilles, Cuba; Brazil.

2. **Philobora conspurcata,** Burm.

Zetobora conspurcata, Burm. Handb. ii. p. 510; Brunn. de W. Syst. Blatt. p. 297. 2 (♀).

Hab. Brazil.

3. **Philobora elegans,** Brunn.

Philobora elegans, Brunn. de W. Syst. Blatt. p. 297. 3.

Hab. Brazil.]

ZETOBORA, Burm.

Zetobora, Burmeister, Saussure, Brunner de W.

1. **Zetobora maximiliani**, Sauss.

Zetobora maximiliani, Sauss. Rev. et Mag. de Zool. 1868, p. 457. 13 (♀ ♂); Miss. Scient. Mex., Orthopt. p. 105. 5.

Hab. MEXICO, Orizaba (*Mus. Genavense*), Atoyac in Vera Cruz (*Schumann*); GUATEMALA, Panzos and Cahabon in Vera Paz (*Champion*).

2. **Zetobora sublobata**, sp. n.

♂. Majuscula, castanea, superne testacea. Pronotum castaneum, rugosum, grosse punctatum ac granulosum, sulcis valde impressis, parte postica elevatiore, utrinque carina humerali perspicua. Margo anterior in medio valde arcuato-productus, utrinque rectus, inter partem mediam cuculli et partes laterales valde sinuatus. Limbus anterior in medio latiuscule testaceus, utrinque rufus, margine toto lineari fusco. Elytra abdomen superantia, apice subattenuata, oblique rotundato-truncata, fulvo-testacea, venis fuscis vel castaneis, propter hoc in campo discoidali distinctissime reticulata; campo anali castaneo. Alæ vitreæ, venis testaceis, area marginali testacea, margine apicali plus minus brunneo-inquinato. Pedes castanei. Abdomen supra marginibus et apice castaneis; segmentis in margine et in medio fuscioribus. Lamina supra-analis transverse quadrato-rotundata, in medio leviter incisa.

♂. Long. 37; pronot. 10·5, latit. pronot. 15, long. elytr. 35, latit. elytr. 12·75 millim.

Hab. GUATEMALA, Pantaleon 1700 feet (*Champion*).

In form this species resembles *Z. maximiliani*; it differs only in its large size, in the lamina supra-analis (♂) being more rounded (in *Z. maximiliani* it is transverse, having only the angles rounded), and in the reticulation of the elytra, the veins being blackish. In *Z. peruana*, which it approaches in size, the margin of the pronotum is not sensibly emarginate on either side of the cowl, the elytra are much wider and more rounded at the apex, and the lamina supra-analis (♀) is transversely quadrate; the larvæ of both species are of an ochraceous colour, marbled with brown.

CAPUCINA, Sauss.

Capucina, Saussure, Societas Entomologica, 1893, p. 67.

Pronotum et elytra rugosa, piloso-velutina.

♀. Caput minutum, reconditum, fronte inter oculos et antennas excavata. Antennæ mediocres, invicem maxime distantes, 1° articulo cylindrico. Oculi in vertice invicem parum distantes. Pronotum transverse fusiforme, latum, subplanum, asper, cucullatum, impressionibus 2 parum profundis. Ejus margines anterior et posterior fere æqualiter arcuati; anterior tamen in medio paulo minus arcuatus, caput valde superans. Elytra amplissima, abdomen superantia, basi punctata, apice dense elevato-reticulosa; margine costali arcuato, apice late rotundato; sulco anali arcuato apice subtransverso. Alæ dense reticulosæ, apice late rotundatæ, vena ulnari multiramosa. Pedes parum elongati, compressi; femora inermia. Tibiæ anticæ supra spinis in margine interiore 2, in margine exteriore 1; posteriores supra 4 : 3, subtus 2 : 2. Arolia inter ungues brevissima, arcuata. Abdomen latum, deplanatum, lateribus serratis; margine laterali segmentorum dorsalium dilatato, postice angulatim producto sed haud spinoso. Lamina supra-analis ♀ prominula, transverse subquadrata, margine posteriore subarcuato, in medio

profunde inciso. Cerci deplanati, subacuti, laminam supra-analem leviter superantes. Ultimum segmentum ventrale lamellare, latum, utrinque ad cercos leviter sinuatum, inter illos transverse arcuatum, in medio anguste incisum.—Mares ignoti.

This is a very remarkable genus. In its general shape *Capucina* agrees with the "Tribe Panchlorinæ," approaching *Zetobora*; but it differs from that genus in its wide flat body, and in having the pronotum and elytra covered with a velvety pile. The elytra are imbricate like those of *Zetobora*, but they are broader, with the marginal field very much dilated, as in the genus *Schizopilia*, Sauss.; but neither the elytra nor the wings are so obtuse as in that genus. The lateral lobes of the abdomen are also more obtuse than in *Zetobora*; and the supra-anal plate is more deeply notched in the middle and less transversely quadrate in shape, it being more like that of *Schizopilia*. The middle and hind tibiæ are less spinose than in the preceding genera of the Tribe Panchlorinæ. *Capucina* is distinctly separated from *Homœogamia* by the posterior field of the wings being much larger in proportion to the anterior field and folding in rest. The supra-anal plate is not elongated as in *Homœogamia*; the cerci are shorter; the legs are not long and slender, and not ciliated; the tibiæ are much less spinose; and the claws have a distinct arolium, which is wanting in *Homœogamia*.

1. **Capucina cucullata,** Sauss. (*Capucinus cucullatus*, Tab. VI. fig. 13.)

Capucina cucullata, Sauss. Societas Entomologica, 1893, p. 67.

♀. Brunneo-testacea. Antennæ fuscæ, ante apicem articulis 4 aurantiis. Caput fuscum; depressione frontis fere elongato-hexagonali. Pronotum et elytra fulvo-brunnea, farinosa, dense velutina. Pronotum insuper ubique minute granulosum ac punctulatum, postice ad elytra obsoletissime rotundato-costatum. Elytra campo marginali latissimo, dense obsolete venuloso, inter venas punctato. Campus discoidalis sinuato-venosus et dense reticulatus, basi punctatus; campus posticus fere ut campus marginalis punctatus; elytri dextri pars obtecta ferruginea, nitida, reticulosa. Alæ sub-vitreæ, venis flavo-testaceis, campo anteriore apice ferruginescente, margine costali flavido, ultra medium opaco. Abdominis margines testacei. Cerci supra fusci, marginibus et apice flavidis.

Long. 29·5; pronot. 9·5, latit. pronot. 16·5, long. elytr. 26·5, latit. elytr. 13 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Tribus PERISPHÆRINÆ.

Only three genera of this Tribe occur in America:—*Parasphæria*, *Proscratea*, and *Brachycola*. No species is recorded from Mexico or Central America.

Tribus CORYDINÆ.

Corydidæ et *Heterogamidæ,* Brunner de Wattenwyl, Syst. Blatt. pp. 334, 350.
Polyphagiens, Saussure, Mém. Mex., Blatt. p. 220.
Polyphagites, Saussure, Miss. Scient. Mex., Orthopt. p. 108.
Corydidæ, Brunner de W. Révision du Système des Orthoptères, p. 11.

In this Tribe the hind wings are very peculiar in form. The posterior field is so

small that it can be drawn beneath the anterior field without folding; the anterior field is very long in proportion, so that there is no apical margin to the wing, this being transformed into the posterior margin of the anterior field and forming with the margin of the posterior field the hind margin of the whole wing, without any interruption. There is no anal notch, and in consequence of this the branches of the ulnar vein all tend to the hind margin of the wing, none being true apical branches. These branches are rather arcuated, with an anterior concavity, or are more or less transverse.

Synopsis generum.

1. Tibiæ fortiter spinosæ; intermediæ et posteriores (saltem intermediæ) supra 3-seriatim spinosæ; omnes apice calcaribus 6 (quando feminæ sunt apteræ, 7). Abdomen latum, in maribus fere orbiculare.
   2. Sexus dissimiles. Elytra ♂ abdomen longe superantia, submembranacea, apice rotundata, ♀ brevioria, coriacea, vel nulla. Tarsi ♀ inter ungues arolio destituti. Caput obtectum. Pronotum ♂ ellipticum vel reverso-trapezino-rotundatum, supra caput cucullato-fornicatum. Lamina supra-analis ♀ plus minus quadrata, ♂ transversa, parum fortiter incisa. Alarum vena media apice ramosa; venæ campi marginalis longitudinales. Insecta majora, fusca vel testacea, lanoso-pubescentia.—Stirps HETEROGAMIA.
      3. Feminarum ultimum segmentum ventrale in medio apice rotundato-tumidum, haud fissum. Marium lamina supra-analis haud producta. Tarsi ♂ inter ungues arolio instructi. (Genera orbis antiqui.)
         4. Feminæ apteræ. Tibiæ ♀ ♂ apice calcaribus 7.—[HETEROGAMIA, B.]
         44. Uterque sexus alatus. Tibiæ apice calcaribus 6.—[DYSCOLOGAMIA, Sss.]
      33. Feminarum ultimum segmentum ventrale apice rostrato-compressum, ac fissum. Marium lamina supra-analis producta, rotundata vel bilobata. Tarsi ♂ inter ungues arolio nullo. Tibiæ apice calcaribus 6. Uterque sexus alatus.—HOMŒOGAMIA, B.
   22. Sexus conformes. Elytra in utroque sexu parum dissimilia, coriacea vel partim membranacea. Tarsi arolio minore instructi. Pronotum anterius haud cucullatum, verticem frequenter liberans. Lamina supra-analis rotundata (vel ♂ transversa). Alarum vena media haud ramosa; venæ campi marginalis longitudinales vel obliquæ. Tibiæ apice calcaribus 6. Insecta venuste colorata, dense piloso-velutina.—Stirps CORYDIA.
      3. Femora anteriora spina geniculari destituta; subtus in utroque margine spina apicali instructa. Ultimum segmentum ventrale ♀ convexum, haud carinatum. Elytra coriacea. Species majores.—[CORYDIA, Serv.]
      33. Femora omnia spina geniculari instructa; subtus in margine interno spina apicali instructa. Ultimum segmentum ventrale ♀ carinatum vel apice compressum, sulco divisum. (Species minutæ.)
         4. Elytra tota opaca, velutina.
            5. Alæ elytris longiores, condite venosæ; vena mediastina ad marginem costalem stigma diffusum efficiens; vena discoidalis obsolete percurrens, ultra stigma in ramos longitudinales soluta.—[EUTHYRRHAPHA, B.]

55. Alæ elytris haud longiores.—[MELESTORA *, St.]

44. Elytra magna parte membranacea, venis nullis; tantum basi et dimidia parte basali costæ opaca ac reticulosa. Alæ venis nullis, nisi basi; vena discoidalis in stigma oblongum ad costam positum desinens.

5. Elytra campo anali et parte costali oblique opaca, de reliquo membranacea.—HOLOCOMPSA, B.

55. Elytra vitrea, tantum costa partim opaca, basi areolis 3.—[HYPERCOMPSA, Sss.]

11. Tibiæ debiliter spinosæ; intermediæ et posteriores supra biseriatim spinosæ, apice calcaribus 5; anteriores apice calcaribus 4. Corpus gracilius, abdomine formæ consuetæ, haud dilatato. Lamina supra-analis rotundata vel trigonalis. Tarsi inter ungues arolio nullo vel ♂ minuto. Femora anteriora spina geniculari nulla; omnia subtus spinis apicalibus nullis. Species minutæ, fusco-testaceæ, parce pubescentes, haud velutinæ.—Stirps LATINDIA.

2. Pronotum ellipticum, bisulcatum. Uterque sexus alatus, aroliis inter ungues nullis. Elytra in maribus complete explicata, membranacea, elongata, in feminis abbreviata, coriacea (vel completa). Lamina supra-analis ♀ ♂ rotundata.—LATINDIA, St.

22. Pronotum corneum. Feminæ apteræ, pronoto parabolico. Mares aroliis inter ungues minimis, compressis; elytris coriaceis, abbreviatis. Lamina supra-analis ♀ trigonalis.—PARALATINDIA, Sss.

HOMŒOGAMIA, Burm.

Homœogamia, Burmeister, Handb. ii. p. 490; Sauss. Mém. Mex., Blatt. p. 226; Miss. Scient. Mex., Orthopt. p. 108; Brunner de W. Syst. Blatt. p. 360; Saussure, Rev. Suisse de Zool. (Ann. du Musée de Genève) i. p. 294 (1893).

Pedes graciles. Tibiæ omnes apice calcaribus 6. Tibiæ anticæ insuper spinis 3–4; intermediæ et posticæ supra triseriatim, subtus biseriatim spinosæ; intermediæ supra spinis 2 : 2 : 3; posticæ supra 4 : 2 : 5 (vel 4 : 3 : 4). Alæ subhyalinæ, costa ultra medium anguste fulvescente.

♀. Oculi quam ocelli æqualiter remoti. Pronotum rhomboidale, margine postico arcuato. Elytra abdomen vix superantia, acuminata, subcoriacea. Alæ minutæ. Abdominis segmentorum anguli acuti. Lamina supra-analis prominula, plana, carinulata, angulis rotundatis, margine postico arcuato, inciso. Ultimum segmentum ventrale apice compresso-rostratum, fissum, bivalve. Metatarsus anterior breviusculus.

♂. Caput obtectum. Oculi invicem propinqui. Pronotum ellipticum vel elliptico-reverso-trapezinum, tomentosum. Elytra grandia tomentosa, submembranacea, campo marginali angusto. Abdomen latum, rotundatum, marginibus sublobatis, angulis segmentorum rotundatis. Lamina supra-analis prominula, retro subcoarctata, rotundato-bilobata. Lamina infra-genitalis brevis, margine postico truncato vel late obtusangulatim inciso utrinque rotundato, stylis 2 gracilibus lateralibus instructa.

A Central-American genus, extending also into South America.

Synopsis specierum.

a. Majores, castaneæ. Tibiæ anteriores insuper calcaria spinis liberis 4; intermediæ subtus 1 : 2, postice 2 : 3. Mares pronoto valde granulato, margine postico quam anticus multo magis arcuato, hoc distincte cucullato; elytris campo marginali latiore; vena mediastina subtus apice laminato-prominula; venis discoidalibus longitudinalibus, in parte distali arcuatis.

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* An imperfectly known South-American genus.

b. *Feminæ*.

c. Corpus in quiete elongatius, magis parallelum. Elytra omnino minute tuberculata.—2. *azteca*, Sss.

cc. Corpus in quiete ovatum. Elytra haud distincte granulata.—1. *mexicana*, B.

bb. *Mares*.

c. Tibiæ intermediæ subtus spinis 1 : 2, posteriores 3 : 4. Elytra tessellata, haud tuberculata; venis campi discoidalis in parte distali longitudinalibus.—1. *mexicana*, B.

cc. Tibiæ intermediæ subtus spinis 1 : 2, posteriores 2 : 3. Elytra basi sparse tuberculata; venis campi discoidalis in parte distali arcuatis.—2. *azteca*, Sss.

aa. Minores, testaceæ. Tibiæ anteriores spinis liberis 3; intermediæ subtus spinis 1 : 1, posticæ 2 : 2. Mares pronoto elliptico, margine antico quam posticus magis arcuato, vix cucullato; elytris campo marginali angustiore; vena mediastina subtus haud laminatim prominula; venis campi discoidalis ad apicem oblique transversis, subrectis.

b. *Feminæ*: in imagine ignotæ.

bb. *Mares*.

c. Pronotum ellipticum, transversum. (Ejus linea diagonalis transversa paulum ante medium discum transcurrens.) Elytrorum sectores discoidales apicales subrecti.—[3. *bolliana*, Sss.]

cc. Pronoti margo anterior magis arcuatus. (Ejus linea diagonalis in medio disco transcurrens.) Elytrorum sectores apicales sat transversi subdecurvi.—4. *apacha*, Sss.

1. **Homœogamia mexicana**, Burm.

Homœogamia mexicana, Burm. Handb. ii. p. 490. 3; Sauss. Mém. Mex., Blatt. p. 226. 114, figs. 36, 37 (♀ ♂); Brunn. de W. Syst. Blatt. p. 361. 1, fig. 53; Sauss. Miss. Scient. Mex., Orthopt. p. 108; id. Rev. Suisse de Zool. i. p. 296 (1893) (♀ ♂).

Minor, fusco-castanea, abdomine et pedibus fusco-testaceis; elytris fusco-marmoratis vel pallide maculosis; tibiis posticis supra spinis 4 : 3 : 4.

♀. Oculi inter se quam ocelli æqualiter remoti. Pronotum densissime, subtilius granulatum, fimbriatum. Elytra abdomen parum superantia, subtiliter granuloso-pilosa, margine costali arcuato. Alæ minutæ. Tarsi quam in *H. azteca* paulo longiores; metatarsus anterior quam 5^{s} articulus tarsorum paulo longior; intermedius 5° articulo longior; posterior tertiam partem tibiæ æquans, quam reliqui articuli computati subæquilongus. Lamina supra-analis lævigata, vix incisa, sparse punctulata.

♂. Oculi inter se sat propinqui. Elytra haud distincte granulosa, subtiliter fusco-tessellata; venis campi discoidalis longitudinalibus. Pedes ut in feminis; metatarsus posticus reliquis articulis computatis æquilongus, quam tertia pars tibiæ longior.

♀. Long. 22; elytr. 19·5, pronot. 8, latit. pronot. 13 millim.

♂. Long. 19·5; elytr. 30, pronot. 7, latit. pronot. 10·5 millim.

Hab. MEXICO, Ventanas in Durango 2000 feet, Sinaloa (*Forrer*), Cordova, State of Vera Cruz (*Saussure*).

2. **Homœogamia azteca**, Sauss. (Tab. V. figg. 4, 5.)

Homœogamia azteca, Sauss. Rev. Suisse de Zool. i. p. 296 (1893) (♀ ♂).

Nigro-castanea, subglabra, *H. mexicanæ* major et illi simillima. Tibiæ posticæ supra spinis 3 : 3 : 3.

♀. Nigro-fusca, in requiete elongato-ovata. Oculi quam ocelli minus remoti. Pronotum transverse fusiforme, margine posteriore quam in *H. mexicana* paulo magis arcuato, utrinque ad angulos subsinuato; anguli

laterales quam in specie laudata paulo acutiores; superficies tota crassius granulata, utrinque pone marginem anticum leviter depressa, in medio ad marginem subcucullata; margine ipso anteriore ad inferum deflexo. Elytra abdomen sensim superantia, castanea, angusta, margine costali in dimidio basali recto; tota maculis pallidis minutis numerosis dense notata; ubique in venis tuberculis minutis elevatis conspersa. Elytrum sinistrum dextrum quam in specie laudata paulo minus obtegens, margine suturali fere recto. Alæ minutæ, subhyalinæ, venis et margine apicali flavidis vel rufescentibus. Abdomen nigrum, marginibus rufis; lamina supra-analis granulata, rufo-marginata, in medio fissa. Pedes rufo-castanei, tarsis subtus luteis. Metatarsus anterior 5° articulo tarsi brevior; intermedius 5° articulo æquilongus; posterior 5° articulo longior, quartam partem tibiæ æquans.

♂. Antennæ rufescentes. Pronotum fuscum vel rufescens, quam in *H. mexicana* paulo crassius granulatum. Oculi subcontigui. Elytra basi castanea, sparse tuberculata, dehinc maculis minutis albis dense conspersa, apice griseo; venis campi discoidalis arcuatis. Alæ hyalinæ, vena humerali et discoidali partim fuscis; costa ultra medium infuscata margine anguste fulvo; margine apicali et partim postico angustissime infuscatis. Pedes rufo-castanei, coxis et femoribus plus minus testaceis. Metatarsus posticus ♂ reliquis articulis computatis æquilongus, quam quarta pars tibiæ longior. Abdomen castaneum, basi pallidius, marginibus fulvo-fimbriatis, pilis rufo-nitentibus. Cerci rufescentes. Lamina supra-analis testacea, apice minute trigonali-incisa, bilobata; lamina infra-genitalis margine rufescente, late subsinuata, stylis lateralibus.

♀. Long. 22·5–27; elytr. 19–22, pronot. 9–10, latit. pronot. 14–16 millim.

♂. Long. 21–23; elytr. 32–34·5, pronot. 6·5–7·5, latit. pronot. 10·75–12 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

This species is very closely allied to *H. mexicana*, but it is more granulated, and the elytra are cribrose with little round pale dots (not tessellato-marmorate as in *H. mexicana*). In the female the elytra are longer, with their outer margins parallel when at rest, not arcuate exteriorly as in *H. mexicana*.

[3. **Homœogamia bolliana,** Sauss. (Tab. V. fig. 3.)

Homœogamia bolliana, Sauss. Rev. Suisse de Zool. i. p. 296 (1893) (♂).

♂. Pallide testacea. Antennæ pallidæ. Caput fuscum, ore testaceo, facie valde excavato-sulcata, rugulosa, utrinque et superne inter ocellos acute marginata; ocellis rubris. Oculi inter se quam ocelli duplo vel triplo propiores. Pronotum testaceum, breve, transverse ellipticum, punctato-pilosum, margine anteriore et posteriore fere æqualiter arcuato, posteriore tantum in lateribus magis arcuato; disco medio castaneo, subgranulato, margine antico testaceo, parum cucullato. Elytra amplissima, obtusa, tota subtiliter fusco-marmorata vel tessellata, campo marginali angusto, margine costali anguste aurantio; venæ obliquæ campi discoidalis sat transversæ, rectæ. Alæ latiusculæ, hyalinæ. Campus anterior in parte ulnari et apicali griseo-tessellatus; venæ anteriores et margo costalis ultra medium aurantiæ; area media vitrea. Pedum spinæ rufescentes; tibiæ intermediæ supra spinis 2 : 2 : 3, posteriores 4 : 2 : 5. Lamina supra-analis minute incisa; lamina infra-genitalis late obtusangulatim sinuata.

Long. 17; elytr. 23·5, pronot. 5, latit. pronot. 13·5 millim.

Larva. Fusco-rufa; pronoto et thoracis marginibus flavidis; pronoti disco macula fusco-rufa.

Hab. NORTH AMERICA, New Mexico; TEXAS (*Boll, Mus. Genavense*).]

4. **Homœogamia apacha,** Sauss. (Tab. III. fig. 20.)

Homœogamia apacha, Sauss. Rev. Suisse de Zool. i. p. 296 (1893) (♂).

♂. Pallide testacea. Antennæ testaceæ. Caput testaceum; vertice inter oculos nigro; facie planata, inter antennas utrinque marginata, ad frontem excavata. Ocelli succinei vel pallidi. Oculi inter se quam ocelli haud propiores. Pronotum testaceum, subtilissime punctatum, disco brunneo vel pictura brunneo-maculosa; margo anterior quam posterior distincte magis arcuatus, caput superans. Elytra quam in

H. bolliana minus lata, margine anteriore vix arcuato, fere tota griseo-tessellata; rami discoidales apicis valde transversæ, apicem versus extus subconcave inflexæ; campus marginalis dimidia parte basali albescente. Alæ vitreæ, venis anticis et stigmate opaco-albidis; margine costali dehinc leviter inquinato. Laminæ anales illis *H. bollianæ* similis.

Long. 13·5; elytr. 18, pronot. 4·25, latit. pronot. 6·25 millim.

♀ (*Nympha*?). Rufo-ferruginea, aptera, capite et pedibus testaceis. Lamina supra-analis transversa, margine parum arcuato, leviter inciso. Cerci tuberculiformes. Segmentum ventrale ultimum planum, margine utrinque sinuato, in medio producto, rotundato.

Long. 13; pronot. 4·6, latit. pronot. 7 millim.

Hab. North Mexico, State of Chihuahua (*Corcelle, Mus. Genavense*).

Obs. Saussure has also described the larva of a Brazilian species of this genus, and Bolivar (Ann. Soc. Ent. Fr. 1890, p. 137) has mentioned the larva of a Venezuelan species, without name.

[EUTHYRRHAPHA, Burm.

Euthyrrhapha, Burmeister, Handb. ii. p. 491 (1839); Brunner de W. Syst. Blatt. p. 342.

1. **Euthyrrhapha pacifica,** Coqueb.

Blatta pacifica, Coquebert, Illustr. Iconogr. Insect. iii. p. 91, t. 21. fig. 1 (1804).
Corydia pacifica, Schaum, in Peters's Reise n. Mossamb., Ins. p. 110.
Euthyrrhapha pacifica, Brunner de W. Nouv. Syst. Blatt. p. 343. 1.
Euthyrrhapha biguttata, Burm. Handb. ii. p. 491.

Tibiæ anteriores supra spinis 2 : 1, subtus 1; intermediæ supra 2 : 2 : 2, subtus 1 : 1; posteriores supra 3 : 3 : 3, subtus 1 : 2.

Hab. Tropical South America, Brazil.—Insulæ africanæ; Oceania.—Species valde diffusa.]

HOLOCOMPSA, Burm.

Holocompsa, Burmeister, Handb. ii. p. 491 (1839); Brunner de W. Syst. Blatt. p. 346 (1865); Saussure, Miss. Scient. Mex., Orthopt. p. 99.

The species of this genus are very cosmopolitan, being easily transported by vessels and in merchandise.

Synopsis specierum.

a. Elytra immaculata.
  b. Pronotum et elytra fusca.—[1. *cyanea,* B.]
  bb. Pronotum aurantium.—2. *collaris,* B.
aa. Elytra fusco-maculata:
  b. macula basali et vitta transversa aurantiis.
    c. Pronoto fusco.—3. *azteca,* Sss.
    cc. Pronoto aurantio, disco fusco.—4. *zapoteca,* sp. n.

bb. macula basali nulla;

c. vitta transversa aurantia; antennis nigris.—5. *tolteca*, sp. n.

cc. macula minore aurantia; antennis basi aurantiis.—6. *binotata*, sp. n.

[1. **Holocompsa cyanea**, Burm.

Corydia (*Holocompsa*) *cyanea*, Burm. Handb. ii. p. 492 (1839).

Holocompsa cyanea, Brunn. de W. Syst. Blatt. p. 346 (1865); Saussure, Miss. Scient. Mex., Orthopt. p. 100.

Hab. ANTILLES, Cuba, St. Thomas.—MAURITIUS; JAVA? (*Mus. Genavense*).]

2. **Holocompsa collaris**, Burm. (Tab. III. fig. 34.)

Holocompsa collaris, Burm. Handb. ii. p. 492 (1839); Guérin, in Ramon de la Sagra's Hist. de Cuba, Ins. p. 332, t. 12. fig. 3; Brunner de W. Syst. Blatt. p. 347 (♀ ♂), t. 10. fig. 50; P. Z. S. 1892, p. 205, t. 15. fig. 6.

Castanea. Antennæ apice flavæ. Pronotum rufo-aurantium. Elytra brunneo-subpubescentia vel nigro-cærulescentia, parte obtecta membranacea, subhyalina, basi et apice infuscata.

Long. 5·6 millim.

Hab. MEXICO, Orizaba (*Saussure*), Atoyac in Vera Cruz (*H. H. Smith*).—ANTILLES, Cuba, St. Thomas (*Saussure*).—MASCARENE IS., Mauritius, Bourbon.

3. **Holocompsa azteca**, Sauss.

Holocompsa azteca, Sauss. Rev. et Mag. de Zool. 1862, p. 230; Mém. Mex., Blatt. p. 181. 79; Miss. Scient. Mex., Orthopt. p. 100. 1, fig. 51 *; Brunner de W. Syst. Blatt. p. 347. 3.

Tibiæ anteriores spinis supra 1 : 1, subtus 1; intermediæ supra 3 : 1 : 3, subtus 1 : 2; posteriores supra 3 : 3 : 3, subtus 2 : 2.

Hab. MEXICO, Moyoapan, State of Vera Cruz (*Saussure*).

4. **Holocompsa zapoteca**, sp. n. (Tab. III. fig. 33.)

♂. *H. aztecæ* statura et pictura similis. Fusca. Antennæ fuscæ, articulo 1° aurantio (apice flavidæ?). Pronotum utrinque et postice anguste aurantium; vel aurantium, macula fusca marginem anteriorem includente, postice rotundata. Elytra fusca, prope basin macula, margine costali basi necnon macula transversa marginem includente in media longitudine, aurantiis; pars obtecta pallidior, basi fusca, dehinc parte transversa flavida, dimidia parte apicali diaphano-infuscata.

Long. 6·75; elytr. 6·5, pronot. 2·2, latit. pronot. 2·5 millim.

Hab. GUATEMALA, Zapote (*Champion*).

5. **Holocompsa tolteca**, sp. n. (Tab. III. fig. 35.)

♀. Staturæ *H. aztecæ*; nigra, leviter cyanescens vel purpurescens. Antennæ nigræ (apice?). Elytra basi nigra, dehinc vitta lata transversa aurantia, in parte membranacea latiore, pallidiore, in parte cornea angustiore, marginem anguste liberante; pars obtecta dextri elytri basi et apice fusca. Alæ subhyalinæ, margine apicali et posteriore toto infuscato, stigmatibus costalibus nigris. Pedes fusco-nigri. Abdomen nigrum.

Long. 6; elytr. 7, pronot. 2, latit. pronot. 2·6 millim.

Hab. GUATEMALA, Purula in Vera Paz (*Champion*).

* *Erratum.*—In the work cited this reference was erroneously printed fig. 49.

6. **Holocompsa binotata,** sp. n. (Tab. III. fig. 32.)

♀. Fusco-nigra, leviter purpurescens. Antennæ nigræ, articulis basalibus 8–10 aurantiis, ante medium articulis 2–3 albidis, apicem versus nigræ. Elytrorum pars cornea in medio macula transversa aurantia; pars membranacea infuscata, vitta transversa pallide flava. Pedes fusci, spinis rufo-testaceis.

Long. 6·5; elytr. 5·8, pronot. 2, latit. pronot. 2·8 millim.

♂? Valde minor. Antennæ? Pars membranacea elytrorum subinfuscata, parte media longe subhyalina, subflavescens. Pedes piceo-testacei. (Amer. merid.)

Hab. GUATEMALA, San Gerónimo (*Champion*).

[HYPERCOMPSA, Sauss.

Hypercompsa, Saussure, Rev. et Mag. de Zool. 1864, p. 19; Mém. Mex., Blatt. p. 154.

Diaphana, Fieber in litt.; Brunn. de W. Syst. Blatt. p. 348; Sauss. Mél. Orth. i. 2ᵉ fasc. p. 101; Miss. Scient. Mex., Orthopt. p. 100.

Spinæ tibiarum ut in genere *Holocompsa.*

Also a genus with widely distributed species, which will most probably be found in Central America.

1. **Hypercompsa fieberi,** Brunn. de W.

Diaphana fieberi, Brunn. de W. Syst. Blatt. p. 349. 1, t. 10. fig. 51 (♂).

Fusca; antennis basi fuscis, dehinc aurantiis; margine posteriore pronoti pallide flavo; cercis aurantiis; pedibus fuscis, spinis rufidis.

Hab. BRAZIL.

2. **Hypercompsa fenestrina,** Sauss.

Hypercompsa fenestrina, Sauss. Mém. Mex., Blatt. p. 155, t. 2. fig. 27.

Diaphana fenestrina, Sauss. Mél. Orth. i. 2ᵉ fasc. p. 101; Miss. Scient. Mex., Orthopt. p. 100.

Tota fusca; antennis ultra medium luteis; cercis luteis.

Hab. BRAZIL.]

LATINDIA, Stål.

Latindia, Stål, Saussure, Brunner de W.

Uterque sexus alatus. Pronotum ellipticum, sulcis arcuatis parum profundis.—♀ ♀. Elytra abbreviata, abdominis apicem liberantia; alæ minimæ. [Anne species elytris ♀ completis, membranaceis alisque explicatis (*mexicana*?)] Cerci acuminati ut in genere *Paralatindia.* Ultimum segmentum ventrale per sulcum divisum.—♂ ♂. Elytra complete explicata, membranacea, abdomen superantia, venosa; vena diagonali instructa. Alæ elytris æquilongis, venis costalibus opacis instructæ. Cerci obtusi, articulis valde discretis, submoniliformes.

Synopsis specierum.

1. *Feminæ.*
   *. Elytra segmenta 2 abdominis liberantia. Arolia inter ungues nulla.—1. *dohrniana,* sp. n.
2. *Mares.*
   a. Pronotum antice haud truncatum, caput obtegens. Elytrorum venæ paucæ. Arolia inter ungues nulla.—2. *cucullata,* sp. n.
   aa. Pronotum ellipticum, verticem liberans.

b. Pronotum testaceum, disco fusco.

c. Elytra abdominis longitudine.—[3. *inca*, sp. n.]

cc. Elytra abdomen superantia. Alæ nebulosæ.

d. Alæ infuscatæ, margine anteriore ultra medium fusco-opaco. Arolia inter ungues nulla.—4. *delicatula*, sp. n.

dd. Alæ margine haud fusco. Elytra abdomen longe superantia.—[5. *pusilla*, sp. n.]

bb. Pronotum opacum, marginibus lateralibus subtestaceis. Alæ pallidæ, margine anteriore modice opaco. Tarsi inter ungues aroliis instructi.

c. Elytra modice longa.—6. *tolteca*, sp. n.

cc. Elytra longa, abdomen valde superantia. Cerci longissimi, articulis valde discretis. —7. *mexicana*, Sss.

1. **Latindia dohrniana**, sp. n. (Tab. V. fig. 7.)

♀. Fusco-brunnea, subtus et pedibus testaceis. Vertex prominulus, subtransversus, fuscus, oculis invicem sat remotis. Antennæ fuscæ, anguste luteo-annulatæ. Pronotum ellipticum, sat dense punctatum, margine anteriore arcuato, posteriore truncato. Disci sulci obliqui modice profundi; discus inter illos ante medium per sulcum obtusangulum profundum transversum divisum, et pone illum sulco longitudinali partitum; pars antica insuper pone marginem anteriorem transverse impressa. Elytra abdominis segmenta 3 ultima liberantia, brunnea, semicoriacea; margine costali fusco; apice acute rotundato; sulco anali distincto; campo anali acuto. Alæ minimæ, hyalinæ, venis brunneis. Femora postica margine infero recto, supero valde arcuato. Tarsi breviusculi. Abdomen fuscum, segmentis basi testaceis. Lamina supra-analis maxima, inter cercos fere semiorbicularis, dimidia parte basali sulcata, apice fissa. Cerci longiusculi, acuti, articulis æqualiter longis ac latis, vel longioribus. Segmentum ventrale penultimum in medio minute angulatum; ultimum rotundatum, convexum, sulco divisum.

Long. 7·5; elytr. 4·5, pronot. 2, latit. pronot. 2·5 millim.

Hab. GUATEMALA (*coll. Dohrn*).

2. **Latindia cucullata**, sp. n. (Tab. V. fig. 9.)

♂. Sat minuta, testacea. Caput rotundatum, fuscum, punctulatum, obtectum, oculis invicem modice remotis. Antennæ testaceæ. Pronotum trigonali-ellipticum, castaneum, per sulcum subtilem divisum, margine anteriore testaceo, quam posterior multo magis arcuato; disci sulci latiusculi, canaliculati; discus pentagonalis, ad marginem anteriorem subcucullatus. Elytra abdomen superantia, brunnea, area mediodiscoidali et parte obtecta hyalinis, venis brunneis, sulco mediastino profundo, castaneo; apex regulariter parabolice-rotundatus; venæ longitudinales valde prominulæ; vena media in medio, vena ulnaris basi, furcata. Alæ hyalino-fumosæ, venis brunneis, parte apicali infuscata, campo marginali ultra medium fuscum, stigmate grandi, opaco; vena ulnari ramis 4 arcuatis. Pedes testacei. Abdomen testaceum, subtus apice fuscum. Lamina supra-analis latiuscule truncata, basi biimpressa. Cerci modice longi ex articulis 5 valde discretis compositi, ultimo brunneo. Lamina infra-genitalis rotundata, limbo et stylis testaceis.

Long. 5·5; elytr. 6·25, pronot. 1·8, latit. pronot. 2·4 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

In this species the pronotum completely covers the head. It differs from *L. delicatula*, moreover, in its elytra having but few longitudinal nervures, the ulnar nervure forming only two or three sectors.

[3. **Latindia inca**, sp. n. (Tab. V. fig. 8.)

♂. Minima; *L. aztecæ* formis haud dissimilis, fusco-testacea. Antennæ fuscæ, 1° articulo nigro. Caput

nigrescens, ore fusco, ocellis flavis, vertice punctato. Pronotum ellipticum, quam in *L. pusilla* paulo majus, corrugatum, antice truncatum, margine postico subarcuato; disco fusco sulco diviso; marginibus lateralibus late pellucidis. Elytra fusco-testacea, abdominis longitudine, semi-membranacea, elevato-reticulata; area mediastina testacea; vena discoidali ad $\frac{3}{4}$ costæ attingente, venas costales parallelas 4–5 emittente; vena diagonali obsoleta; campo anali acuto. Alæ? Pedes longiusculi, fusco-testacei. Lamina supra-analis transversa. Cerci longi, graciles, depressi, fusci, subulati, articulis 10 brevibus perspicuis. Lamina infra-genitalis rotundata, stylis lateralibus.

Long. 4·7; elytr. 3·5, pronot. 1·2, latit. pronot. 1·7 millim.

Hab. PERU, Tarma.]

4. **Latindia delicatula,** sp. n. (Tab. V. fig. 10.)

Sat minuta, subtus testacea. Caput castaneum, levissimo prominulum. Antennæ fuscæ. Pronotum fere perfecte transverse ellipticum, margine posteriore tamen paulo minus arcuatum quam anterior; disco castaneo, sat minuto, marginibus lateralibus late, anteriore anguste, testaceis vel nebulosis (vel pronotum testaceum, disco medio inter sulcos castaneo). Disci sulci arcuati, canaliculati, lineaque media subtiliter sulcata. Elytra abdomen superantia, in requiete fusco-ænea, purpureo-nitentia, valde venosa; vena spuria diagonalis elevata; vena ulnaris subrecta, in vena diagonali desinens; ejus rami 4 in vena diagonali exserti; vena media in vena diagonali furcata. Alæ elytra in requiete leviter superantes, brunneo-nebulosæ apice obscuriores, venis brunneis; campo marginali a medio brunneo-opaco; vena ulnari 4-ramosa.

Long. 5·6; elytr. 6, pronot. 1·4, latit. pronot. 2 millim.

Hab. GUATEMALA, Zapote (*Champion*).

This species is rather more slender than *L. cucullata*; it has the elytra a little narrower, longer, and more venose.

[5. **Latindia pusilla,** sp. n.

♂. Minuta, fusco-testacea. Antennæ fusco-annulatæ. Caput subglobosum, vertice subplanato, obscuro. Pronotum minimum, planulum, ellipticum, postice tamen quam antice latius truncatum, corrugatum impressionibus profundis, per sulcum postice abbreviatum divisum; disco brunneo, marginibus lateralibus late pellucidis. Elytra abdomen longe superantia, sat ampla, semi-coriacea, diaphano-fusca, in requiete sese complete tegentia. Vena discoidalis ad $\frac{3}{4}$ marginis costalis attingens, venas costales 10–12 emittens. Vena ulnaris flexuosa ramos *anteriores* emittens. Campus analis minutus, piriformis, irregulariter reticulatus. Elytrum dextrum venam diagonalem tantum in dimidia parte basali obferens. Alæ amplæ, fusco-nebulosæ; vena ulnaris ramos 4 basi remote pectinatos emittens; his curvatis, dehinc longitudinalibus furcatisque. Pedes longi ac graciles. Abdomen gracile. Cerci elongati, graciles, fusci, articulis 10–12, pallide articulati; ultimis 3 minutis subulatis. Lamina infra-genitalis rotundata, stylo minuto instructa.

Long. 5·5; cum elytr. 8, elytr. 6·7, pronot. 1·4, latit. pronot. 2·1, cerci 2 millim.

Hab. PERU, Tarma.]

This small species approaches the type of *L. mexicana*, having very large membranaceous wings, and the elytra imbricate in their whole width, so that the interior border of the left elytron covers the outer border of the right one. It differs, however, from the type of *L. mexicana* in having the pronotum truncated and wrinkled; the elytra less membranaceous and more reticulated, the right one without a diagonal nerve; the hind wings with furcated sectors; and the cerci with shorter joints. (Comp. the figures of *L. mexicana*, l. c.)

6. **Latindia tolteca,** sp. n.

L. delicatulæ simillima, paulo crassior; elytris paulo latioribus. Pronotum fere totum brunneo-opacum, tantum marginibus lateralibus parum late testaceis.

Long. cum elytr. 13 millim.

Hab. MEXICO, Moyoapan (*Mus. Genavense*).

The specimen described has the abdomen broken. It is apparently a male, but it is not impossible that it may prove to be the female of *L. mexicana*. If such is the case, *L. mexicana* should form a separate group, both male and female having long membranaceous elytra.

7. **Latindia mexicana,** Sauss.

Latindia mexicana, Sauss. Rev. et Mag. de Zool. 1868, p. 100 (♀ ♂); Miss. Scient. Mex., Orthopt. p. 110. 1, figg. 53 et seq.

Tibiæ anteriores subtus spinis liberis nullis; intermediæ supra 2:2, subtus 1:1; posteriores supra 3:3, subtus 2:2 vel 1:2 armatæ.

Hab. MEXICO, Eastern Cordillera (*Saussure*).

PARALATINDIA, Sauss.

Paralatindia, Saussure, Rev. et Mag. de Zool. 1868, p. 100; Miss. Scient. Mex., Orthopt. p. 111.

Pronotum corneum. Cerci styliformes, depressi, articulis parum discretis, apice acuminati in pilum spiniformem excurentes.— ♀ ♀ apteræ, angulis mesonoti et metanoti leviter productis; pronoto parabolico, impressionibus discoidalibus vix ullis. Ultimum segmentum ventrale apice compressum, fissum.— ♂ ♂ incomplete alati; elytris coriaceis, abbreviatis, abdominis apicem liberantibus; alis minutis, venis principalibus indivisis, vena ulnari ramosa; campo posteriore minuto; pronoto subparabolico vel subelliptico, sulcis discoidalibus profundis.

It is possible that the females of some of the species of this genus bear rudiments of elytra.

Synopsis specierum secundum mares ordinatarum.

a. Pronotum subellipticum, impressionibus obsoletis. Elytra abdominis apicem liberantia, vena diagonali instructa; apice minus rotundata; margine suturali recto, costali apice arcuato. Statura minor.—1. *azteca,* Sss.

aa. Pronotum subparabolicum, sulcis profundis, margine posteriore transverso. Elytrorum apice rotundata, vena diagonali nulla.

b. Elytra tantum abdominis apicem liberantia.—[2. *peruviana,* sp. n.]

bb. Elytra valde abbreviata, abdomen liberantia.—[3. *mancella,* sp. n.]

1. **Paralatindia azteca,** Sauss.

Latindia azteca, Sauss. Rev. et Mag. de Zool. 1868, p. 101. 16; Miss. Scient. Mex., Orthopt. p. 112. 2, t. 2. figg. 54, 55 (♂ ♀).

Tibiæ anteriores spinis liberis nullis; intermediæ supra 2:2, subtus?; posteriores supra 3:3, subtus 0:2.

Hab. MEXICO, Moyoapan, State of Vera Cruz (*Saussure*).

[2. **Paralatindia peruviana,** sp. n. (Tab. V. figg. 11–14.)

P. aztecæ formis simillima at duplo major, rufo-castanea vel rufescens, subtus pedibusque testaceis. Antennæ brunneæ. Caput punctatum, vertice rufescente. Tibiæ anteriores spinis liberis supra 1, subtus 0; intermediæ supra 2 : 2, subtus 1 : 1; posteriores supra 3 : 3, subtus 2 : 3.

♀. Pronotum parabolicum, fere semiorbiculare, antice paulum truncatum; margine posteriore transverso, subbisinuato, disci impressionibus vix ullis. Abdomen segmentis supra fusco-limbatis, subtus marginibus latiuscule infuscatis; lamina supra-analis late trigonalis, truncata; ultimum segmentum ventrale convexum, semiorbiculare, fissum.

♂. Pronotum paulo magis ellipticum, angulis posticis subrotundatis, punctulatum, fusco-testaceum, sulcis obliquis profundis elongatis; disco medio fere piriformi, fusco, retro inter sulcos anguste producto, per sulcum longitudinalem diviso, transverse striolato, antice plicato-rugato. Elytra semicoriacea, abdominis apicem liberantia, in requiete sese late tegentia, apice regulariter (fere semiorbiculariter) rotundata, valde venosa, fusco-testacea, venis principalibus basi fuscis, inter venas distincte reticulata; vena diagonali partem obtectam delineantem nulla; margine costali pallide testaceo. Alæ minutæ, infuscatæ, apice rotundatæ, campo anteriore usque ad venam mediam obscuriore, coriaceo, apice fusco. Vena humeralis crassa, fusca, venis costalibus nullis. Venæ humeralis, discoidalis et media indivisæ; vena ulnaris 4-ramosa. Abdomen testaceum, plus minus infuscatum. Ultimum segmentum dorsale transversum, in medio sinuatum. Lamina supra-analis transverse quadrata, angulis rotundatis, margine postico subarcuato, subinciso. Cerci articulis subdiscretis, paulo longioribus quam latioribus. Lamina infra-genitalis parabolica, stylis luteis, longis, acutis.

♀. Long. 9·75; pronot. 2·8, latit. pronot. 4·2 millim.

♂. Long. 11; elytr. 7, pronot. 3, latit. pronot. 4 millim.

Hab. PERU, Tarma (*Mus. Genavense*).]

[3. **Paralatindia mancella,** sp. n. (Tab. V. fig. 6.)

♂. *L. peruvianæ* simillima at minor; capite abdomineque nigris; pedibus ventreque testaceis; pronoto elytrisque fusco-ferrugineis. Pronotum fere semiorbiculare, margine postico transverso, utrinque vix arcuato, angulis vix hebetatis; disco macula piriformi fusca, oblique bisulcato et per sulcum longitudinalem diviso. Elytra valde abbreviata, subcornea, apice rotundata, per marginem suturalem sese, simul ac segmenta 3–4 abdominis, tegentia. Alæ elongato-squamiformes. Lamina supra-analis transversa, rotundato-trapezina; cercis brevissimis, fusiformibus. Lamina infra-genitalis minuta, arcuata, stylis lateralibus instructa.

Long. 7·5; elytr. 2·4, pronot. 2·3, latit. pronot. 3·4 millim.

Hab. PERU, Tarma (*Mus. Genavense*).

Differs from *L. peruviana* in its short elytra and fusiform cerci, the latter depressed and scarcely longer than the supra-anal plate.]

Tribus BLABERINÆ.

Blaberidæ, Brunner de W. Syst. Blatt. p. 361.
Blabériens, Monachodiens, Saussure, Mém. Mex., Blatt. pp. 230, 251.
Blabérites, Saussure, Miss. Scient. Mex., Orthopt. p. 113.

Synopsis generum.

1. Caput obtectum, saltem vix prominulum. Pronotum majusculum. Lamina supra-analis transverse quadrata. Ultimum segmentum dorsale abdominis brevissimum, transversum. Cerci breves, laminam supra-analem vix superantes. Alarum campus posterior totus radiatus, vena axillari tantum furcata; campus intermedius, propter hoc, nullus.

2. Pronotum distincte cucullatum, margine anteriore reflexo, caput superans, margine postico variabili, arcuato, vel biangulato, vel transverso. Lamina supra-analis retro dilatata, utrinque angulata, anguste incisa. Mares semper completa alati. Elytrorum et alarum campi discoidalis venæ valde longitudinales. Alarum campus anterior grandis, campo posteriore minore. Elytrorum area basalis marginalis brevis, medium marginem haud superans. Femora spina geniculari nulla, ac subtus inermia. Cerci quam lamina supra-analis breviores.

3. Pronoti limbus anterior fortiter lamellari reflexus, cucullo disci prominulo, deplanato. Elytra ♀ ♂ completa.—[PETASODES, Sss.]

33. Pronoti limbus anterior subtiliter reflexus, cucullo rotundato, plus minus prominulo. Elytra ♀ completa vel incompleta.—[MONACHODA, B.]

22. Pronotum nec antice reflexum, nec distincte cucullatum, caput minus longe superans, ellipticum quando elytra condite explicata, parabolicum quando elytra sunt abbreviata. Lamina supra-analis quadrato-rotundata, parum incisa, posterius haud dilatata. Elytra in utroque sexu grandia vel abbreviata. Alarum campus anterior angustior, posterior sat grandis. Elytrorum area basalis marginalis coriacea, longissima, medium marginem longe superans. Venæ costales (vel rami v. discoidalis) propter hoc tantum ad apicem marginis desinentes. Femora 2ª, 3ª spina geniculari brevi armata; 1ª, 2ª subtus utrinque, 3ª in margine antico, spinula apicali armata. Femora subtus: anteriora in margine antico, reliqua in margine postico, fimbriata. Cerci laminam supra-analem æquantes.

3. Pronotum maximum, ellipticum. Uterque sexus complete alatus; elytrorum et alarum venæ numerosissimæ, sat longitudinales. Elytra latissima, coriacea, apice late rotundata. Lamina supra-analis apice haud attenuata, marginibus lateralibus parallelis, margine postico arcuato, inciso. Cerci longiusculi. Femora 2ª, 3ª subtus inermia.—ARCHIMANDRITA, Sss.

33. Pronotum minus grande. Venæ elytrorum et alarum areæ ulnaris minus numerosæ, magis obliquæ. Elytra haud insigniter lata, quando complete explicata, apice oblique truncato-rotundata. Lamina supra-analis in speciebus rite alatis, ut in præcedentibus; in speciebus larviformibus magis rotundata, minus incisa.—(Stirps *Blabera*.)

4. Uterque sexus complete alatus. Pronotum ellipticum. Lamina supra-anali prominula, leviter incisa. Cerci longiusculi. Femora 2ª, 3ª subtus inermia.—BLABERA, Serv. (ex parte).

44. ♀ ♀. Elytra truncata, cornea vel lobiformia, lateralia; alæ minimæ, segmentum mediale haud vel vix superantes. Pronotum parabolicum, antice subcucullatum; margine postico transverso. Lamina supra-analis parum prominula, postice arcuata, vix incisa. Cerci brevissimi.— ♂ ♂. Elytra completa vel abbreviata. Pronotum in alatis plus minus rotundato-trigonale.— ♀ ♂. Femora 2ª, 3ª subtus spinis nonnullis armata (rare inermia).

5. Elytra ♀ truncata, sese intus tegentia; ♂ lata, campo marginali latiusculo, area mediastina venosa, haud longe producta. Pronotum ♂ antice magis arcuatum quam postice.—[BYRSOTRIA, Stål.]

55. Elytra ♀ lateralia, lobiformia, ♂ variabilia.

6. Elytra ♂ elongata, angusta, campo marginali angusto, area marginali brevi,

margine costali in medio subsinuato; ♀ lobiformia, lateralia, articulata. Alæ minimæ. Pronotum ♂ subellipticum. Femora 2ª, 3ª inermia. Abdominis segmenta angulis haud acute productis.—[Blaptica, Stål (ex parte).]

66. Elytra ♀ ♂ valde abbreviata, vel lobiformia, cornea, articulata; ♀ lateralia. Alæ minimæ. Pronotum in utroque sexu parabolicum. Femora 2ª, 3ª subtus spinis instructa. Abdominis segmenta angulis acute productis.—Hemiblabera, Sss.

11. Vertex prominulus; femora omnia subtus in utroque margine spinosa. Corpus larviforme; pronoto parabolico. Elytra squamiformia, haud articulata; lamina supra-analis transversa. Cerci brevissimi.—Cacoblatta, Sss.

ARCHIMANDRITA*, Sauss.

Archimandrita, Saussure, Societas Entomologica, 1893, p. 67.

Synopsis specierum.

a. Pronotum ellipticum. Elytra perfecte explicata.—1. *marmorata,* Stoll.

aa. Pronotum semiorbiculare. Elytra abbreviata.—[2. *deplanata,* Sss.]

1. **Archimandrita marmorata,** Stoll.

Blatta marmorata, Stoll, Kakkerl. t. 2 *d*. fig. 5.

Blabera marmorata, Sauss. Mém. Mex., Blatt. p. 249. 130; Brunn. de W. Syst. Blatt. p. 378. 7.

Blatta colossea, Illiger, Magaz. für Ins. i. p. 186.

Blabera discoidalis, Serville, Orthopt. p. 76, t. 1. fig. 2; Sauss. Mém. Mex., Blatt. p. 250; Miss. Scient. Mex., Orthopt. p. 118. 16.

Fulva, brunneo-irrorata; pronoto et scutello medio nigris. Alæ latissimæ. Femora sparse pilosa; anteriora subtus in margine antico spinis 1–5, dehinc setis confertis instructa; margine postico frequenter spinis 1–2.—*Larvæ* fuscæ, margine anteriore pronoti, maculis thoracis seriebusque 6–8 macularum in abdomine flavis.

♀. Long. 52–63; elytr. 50–56, pronot. 16·5–18·5, latit. pronot. 26–30 millim.

♂. Long. 50–58; elytr. 57–62, pronot. 15–16·5, latit. pronot. 24–25 millim.

Hab. Guatemala (*Saussure*); Costa Rica (*Van Patten, P. Biolley*); Panama, Volcan de Chiriqui (*Champion*).—Brazil, Bahia; Antilles, San Domingo.

[2. **Archimandrita deplanata,** Sauss. (Tab. V. fig. 18.)

Blabera deplanata, Sauss. Mém. Mex., Blatt. p. 250. 131 (♀); Miss. Scient. Mex., Orthopt. p. 118. 17 (♀).

Lata, rufo-castanea. Valde deplanata; pronoto lato, ruguloso, perfecte semiorbiculari, antice obsolete subcucullato. Elytra rugulata, valde abbreviata, dimidium abdomen liberantia, apice rotundata. Femora anteriora spinis 1–3, posteriora 1 in margine antico (spinis variabilibus). ♂ ♀.

♀. Long. 52; elytr. 25, pronot. 18·4, latit. pronot. 30·5 millim.

♂. Long. 43; elytr. 17, pronot. 14·5, latit. pronot. 24 millim.

Hab. Antilles, Cuba (*Mus. Genavense,* ♂).]

* ἀρχιμανδρίτης, archimandrite.

BLABERA, Serv.

Blabera, Serville, Orthopt. p. 74 (1831) (partim), et auctt.

This genus is peculiar to Tropical America, extending also beyond the Tropics to the south. Its species are rather numerous and extremely closely allied; they are very difficult to distinguish, on account of the variability of their markings. We have therefore considered it advisable to give a conspectus of all the known species, so that those from Central America may be more readily identified.

The colour of the elytra is somewhat variable, the brown markings on the middle being occasionally obsolete. The discoidal macula of the pronotum is also very variable in form (comp. Tab. V. figg. 28–31), extending to, or distant from, the anterior margin, and either adorned with ferruginous dots or not dotted at all. The eyes in certain species are more approximated in some specimens than in others. The femora bear typical spines, but they are obliterated in some individuals. These differences are not specific.

Synopsis specierum.

(The species not numbered and in parentheses are mentioned here to avoid confusion; they do not belong to the Central-American fauna.)

a. Femora anteriora subtus in margine anteriore spinis 2–5; intermedia subtus apice utrinque spina 1. Pronotum plane ellipticum, disco macula grandi nigra. Elytrorum area costalis lævigata, punctulata, elongata.

b. Area costalis longissima, dimidium marginem longe superans, per sulcum flexuosum campum marginalem dividentem delineata. Statura magna vel media.

c. Fulvescens, macula pronoti postice rotundata, limbum liberans, antice utrinque acute producta.

d. Grandis.—(*stollii,* Br.)—(?*ferruginea,* Stoll.)

dd. Media. Oculi in vertice modice remoti, paralleli.—(*brasiliana,* Sss.)

cc. Macula disci marginem posticum pronoti attingens.

d. Majores; macula discoidali quadrata, marginem posticum includens.

e. Elytra magna parte fusca, basi maculis luteis 4; alæ fuscæ.—1. *atropos,* Stoll.—(*fusca,* Br.)

ee. Elytra fulva, fascia transversa discoidali fusca.

f. Maxima, pronoto magis transverso.—(*gigantea,* L.)

ff. Minus grandis, pronoto minus transverso.—2. *trapezoidea,* B.

dd. Minores, macula discoidali retro angustata (per varietatem quadrata); elytra fulva, vitta humerali fusca, disco plus minus basi infuscato. Oculi remoti.

e. Minor, alis infuscatis. Oculi in vertice remoti, infere divergentes. Species minima generis.—(*minor,* Sss.)

ee. Statura media, alis fulvo-hyalinis.

f. Oculi in vertice minus remoti; capite nigro. Macula pronoti retro paulum angustata, marginem posticum includens.

g. Oculi in summa fronte paralleli; pronotum plane ellipticum margine posteriore arcuato.—(*cubensis*, Sss.)—(?*fraterna*, Sss.)

gg. Oculi in summa fronte inferius divergentes; pronotum margine posteriore subtransverso.—[3. *rufescens*, sp. n.]

ff. Oculi in vertice magis remoti, inferius valde divergentes. Macula pronoti retro angulata marginem posteriorem per angulum attingens (nonnunquam trapezina, marginem posticum partim includente), angulis anticis utrinque acutis.—[4. *scutata*, sp. n.]

bb. Area costalis lævigata, brevior, dimidium marginem haud superans, per sulcum rectum delineata. Alæ et elytrorum pars distalis infuscata. Species minima generis.—(*minor*, Sss.)

aa. Femora omnia subtus inermia; femora anteriora et intermedia subtus margine postico spinis apicalibus 2 (1ª femorum anticarum nonnunquam deficiens). Oculi in vertice maxime remoti, paralleli; vertex inter illos longitudinem articulorum 2 primorum antennarum latitudine æquans. Pronotum haud plane ellipticum, magis trapezinum; margine posteriore ad humeros obtusangulato; anteriore supra caput arcuato, utrinque subrecto, angulis lateralibus minus rotundatis. Margo posterior pronoti niger. Abdomen subtus utrinque fusco-limbatum.

b. Vertex inter oculos rotundatus.

c. Fulvo-testacea. Pronoti macula nigra reverso-trigonalis, fulvo-guttata, margine posteriore toto nigro, cum apicem maculæ confuso.—(*sulzeri*, Guér.)

cc. Rufo-testacea. Pronoti disco nigro-tessellato. Elytra fuscescentia. Spina subapicalis femorum anteriorum frequenter nulla.—(*postica*, Er.)—5. *thoracica*, sp. n.

bb. Vertex compressus, oculi plus quam longitudine 1ⁱ articuli antennarum distantes, fronte supra antennas planato. Fusca, pronoti disco guttis et margine anteriore obscure fulvis; elytris infuscatis, apice acutioribus.—[6. *immacula*, sp. n.]

1. **Blabera atropos**, Stoll.

Blatta atropos, Stoll, Kakkerl. t. 2. fig. 8.

Blabera atropos, Serv. Orth. p. 77. 3; Sauss. Mém. Mex., Blatt. p. 233. 116; Miss. Scient. Mex., Orthopt. p. 114. 3; ? Brunn. de W. Syst. Blatt. p. 375. 4.

Hab. Mexico, Cordova (*Saussure*).—South America; Antilles, Cuba (*Mus. Genavense*).

2. **Blabera trapezoidea**, Burm. (Tab. V. figg. 26–31.)

Blabera trapezoïdea, Burm. Handb. ii. p. 516. 1; Brunn. de W. Syst. Blatt. p. 374. 3 (syn. Stål et Serv. exclus.); Sauss. Mém. Mex., Blatt. p. 240. 123; Miss. Scient. Mex., Orthopt. p. 114. 2.

Blabera mexicana, Sauss. Mém. Mex., Blatt. p. 234. 117.

Species testacea, pictura valde variabili. Elytrorum vitta fusca in vena humerali cum fasciam transversam discoidalem pone campum analem continua. Abdomen fuscum, subtus maculis transversis flavis. Variat:—

Elytris parte apicali campi discoidalis infuscata: *a*. Vitta baseos disci per maculam testaceam transversam separata, illa late fusca (Mexico: Tabasco).—*b*. Campo discoidali toto fusco (Tabasco).—*c*. Fere totis fuscis, area marginali et macula anali fulvis (Tabasco).

Macula nigra pronoti : *a*. Quadrata (fig. 30).—*b*. Antice angulata.—*c*. Angulo antrorsum in processum angustum nigrum productum (fig. 28).—*d*. Rotundata, crenulata (fig. 29).—*e*. Retro breviter dilatata.—*f*. Utrinque sinuata (fig. 31).

Segmentum ultimum ventrale ♀ : *a*. Apice sat anguste parabolico-producto (var. obscura ex Tabasco).

Elytri forma : *a*. Apice late fere semiorbiculariter rotundato (fig. 27) (♂ pallidus, antennis rufis : Las Mercedes 3000 pedes).—*b*. Elytra apice angustius rotundato, parabolico : apex ante medium latitudinem situs (fig. 26) (Tabasco).

♀. Long. 52–63 ; elytr. 55–64, pronot. 14–16·5, latit. pronot. 19–23 millim.

♂. Long. 47–51 ; elytr. 49–55, pronot. 13–14·5, latit. pronot. 17·5–21 millim.

Hab. MEXICO, Tampico in Tamaulipas (*Richardson*, *Saussure*), Guadalajara in Jalisco (*Höge*), Atoyac in Vera Cruz (*Schumann*), Teapa in Tabasco (*H. H. Smith*), Eastern coast (*Mus. Genavense*) ; BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*) ; GUATEMALA (*Saussure*), Las Mercedes 3000 feet, Zapote (*Champion*), Panzos in Vera Paz (*Conradt*) ; COSTA RICA (*Mus. Genavense*).—GUIANA ; ECUADOR ; BRAZIL ; PERU ; ANTILLES, Cuba.

[3. **Blabera rufescens,** sp. n. (Tab. V. fig. 22.)

♀. Subtus fusco-rufa, supra rufescens. Caput nigrum, ore et ocellis flavis ; oculis in vertice sat remotis, inferius divergentibus. Pronotum fulvo-aurantium, coriaceo-rugulosum, macula grande trapezina nigra, marginem posticum includente ; ejus forma quam in reliquis speciebus minus plane elliptica, margine posteriore quam anteriore medio, multo minus arcuato. Elytra quam in præcedentibus breviora, apice oblique rotundato-truncata, coriacea, flavo-fulva, vitta humerali fusca. Alæ subhyalinæ, margine antico et venis campi antici elytrorum colore.

Long. 54 ; elytr. 43, pronot. 13·25, latit. pronot. 19 millim.

Hab. ANTILLES, Cuba (*Dr. Krug*).

A species somewhat aberrant in form, principally as regards the pronotum, which is not so regularly elliptical as in the other members of this group ; its greatest width is rather behind the middle of its length, the anterior margin being more arcuated. Its shape more resembles that of *B. sulzeri* and *B. thoracica*.]

[4. **Blabera scutata,** sp. n. (Tab. V. fig. 24.)

Inter minores hujus divisionis. Pallide flavo-testacea, capite et pedibus nigris vel fuscis ; clypeo et ocellis flavis, fronte et vertice frequenter obscure rufis necnon vitta interocellari flava (frequenter deficiente). Antennæ fuscæ. Pronoti macula nigra, trigonalis, angulis anticis lateraliter acutis, postice coarctata, ad marginem angulata, frequenter fulvo 5-guttata vel picturata (variat postice latior, trapezina). Elytra testacea, leviter infuscata, fascia humerali fusca, margine et campo anali pallidioribus. Alæ leviter nebulosæ, venis fulvis. Abdomen flavidum, fusco-marmoratum, vel segmentis supra piceo- subtus fusco-marmoratis. Lamina supra-analis rotundato-bilobata, nullomodo angulata. Ultimum segmentum ventrale ♀ in medio sensim producto, toto fusco vel flavo. ♀ ♂.

Varietas obscura. Elytra magis infuscata. Pedes et abdomen subtus fere tota fusca. Caput nigrum, vitta frontali flava nulla.

♀. Long. 40 ; elytr. 42, pronot. 12·25, latit. pronot. 17·25 millim.

♂. Long. 40 ; elytr. 41, pronot. 11, latit. pronot. 17·5 millim.

Hab. BRAZIL, Pernambuco (*Mus. Genavense*).

When the black macula of the pronotum is of normal form it is shaped like an heraldic escutcheon, as in *B. stolli*, but much more triangular. The body is of the same pale colour as in that species.]

5. **Blabera thoracica,** sp. n. (Tab. V. fig. 25.)

♀. Statura *B. sulzeri* et illi affinis. Fulvo-aurantia, capite et antennis nigris, his apice rufis. Pronotum sat trapezinum ut in specie laudata; marginibus lateralibus oblique divergentibus; margine postico subarcuato, antico valde arcuato, toto rufo-aurantio; disco late fusco-lineolato et punctato, circumcirca nigro-marginato, margine postico itaque nigro, parte antica media brunnea, per lineam flavam divisa. Elytra fusco-testacea, vitta humerali obscuriore. Alæ fulvo-testaceæ. Abdomen et pedes rufescentes; illo superne obscuriore, angulis segmentorum flavidis, subtus brunneo-marginato. Lamina supra-analis prominula, rotundato-bilobata.

Var. Pronoto fere toto aurantio, fusco-picturato, margine postico fusco.

Long. 40; elytr. 38, pronot. 12·25, latit. pronot. 17·5 millim.

Hab. PANAMA.—COLOMBIA, Bogota (*Mus. Genavense*).

This species seems to be closely allied to *B. postica*, Er.

[6. **Blabera immacula,** sp. n. (Tab. V. fig. 23.)

Fusco-nigra, *B. thoracicæ* formis simillima. Pronotum utrinque paulo magis angulatum, margine anteriore et laterali rufescente, disco maculis 5 aurantiis. Elytra infuscata. Alæ testaceæ. Pedes et abdomen subtus rufa, hoc marginibus supra rufis, subtus nigris. Lamina supra-analis parum incisa. ♀ ♂.

♀. Long. 40; elytr. 43, pronot. 12, latit. pronot. 18·5 millim.

Hab. BRAZIL, Pernambuco (*Mus. Genavense*).]

[BYRSOTRIA, Stål.

Byrsotria, Stål, Rech. sur le Syst. des Blatt. (Bihang till k. Sv. Vet.-Akad. Handl. Bd. 2, No. 13) p. 18 (1874).

Femora 1ª, 2ª subtus in utroque margine, posteriora in margine antico spina apicali 1 armata; femora anteriora insuper subtus in margine antico spinis 2–4 armata.

Synopsis specierum.

1. *Feminæ.* Elytra transverse truncata, sese intus tangentia, abdomen liberantia, margine posteriore leviter obliquo, bisinuato. Femora anteriora subtus margine antico, basi spinis 2–4.
   - *a.* Major, nigra vel rufescens, pronoti margine antico flavo. Femora 2, 3 subtus margine antico spinis 2–3, posteriora in medio 0–2.—1. *thunbergi,* Guér.
   - *aa.* Minor, tota nigra, femora 2, 3 subtus spinis variabilibus.—Id. Var. *minor*.

11. *Mares.*
   - *a.* Elytra lata, abbreviata, late rotundata, abdominis apicem liberantia; alæ illis ⅓ breviores. Femora posteriora subtus spinis 1 vel 2. Pronoti margo anterior repande testaceus.—1. *thunbergi,* G.
   - *aa.* Elytra et alæ abdomen superantia. Femora posteriora subtus in medio margine spina unica. Pronotum antice repande vel anguste fulvo-marginatum.—2. *fumigata,* Guér.

1. **Byrsotria thunbergi,** Guér.

Blatta (*Monachoda*) *thunbergii,* Guér. in Ramon de la Sagra's Hist. Nat. Cuba, Ins. p. 140, t. 12. figg. 6 (♂), 6 *a* (♀); Brunn. de W. Syst. Blatt. p. 368. 6.

Blabera thunbergii, Sauss. Mém. Mex., Blatt. p. 246. 128; Miss. Scient. Mex., Orthopt. p. 117. 18.

Hab. CUBA.

2. **Byrsotria fumigata** *, Guér.

Blatta (*Blabera*) *fumigata*, Guér. in Ramon de la Sagra's Hist. Nat. Cuba, Ins. p. 139, t. 12. figg. 4, 4 *a* (♂); Sauss. Mém. Mex., Blatt. p. 244. 127; Miss. Scient. Mex., Orthopt. p. 117. 12; Brunn. de W. Syst. Blatt. p. 381. 11.

Hab. Cuba.]

[BLAPTICA, Stål.

Blaptica, Stål, Rech. sur le Syst. des Blatt. p. 18 (1874).

Synopsis specierum.

a. Fusco-testacea; abdomine fusco et flavo transverse vittato; alis ♂ brunneo-nebulosis; pronoti margine antico late testaceo. Femora anteriora subtus in margine antico spina 1 vel nulla. —1. *claraziana*, Sss.

aa. Fusco-nigra, alis ♂ fuscis, femoribus anterioribus subtus spinis 2–4.—*obscura*, sp. n.

1. **Blaptica claraziana**, Sauss.

Blabera claraziana, Sauss. Mém. Mex., Blatt. p. 243. 126, t. 2. figg. 41, 42 (♀ ♂); Miss. Scient. Mex., Orthopt. p. 116. 11.

Blaptica claraziana, Stål, Rech. Syst. Blatt. p. 18.

Blabera ligata, Brunn. de W. Syst. Blatt. p. 381. 11.

Fusco-castanea, margine anteriore et laterali pronoti margineque costali elytrorum late flavo-fulvis; elytris brunneis, fusco-fulvis, campo anali pallidiore; alis ♂ pallide brunneo-fulvis; pedibus rufescentibus; abdomine flavo-fulvo, segmentis late castaneo-limbatis.

♀. Long. 36·5; elytr. 9·5, pronot. 11, latit. pronot. 16 millim.

♂. Long. 34·5; elytr. 33, pronot. 9·5, latit. pronot. 13 millim.

Hab. La Plata.

2. **Blaptica obscura**, sp. n.

♂. Pronotum, elytra et alæ tota pallide fusco-nigra; pronoti margine anteriore angustissime flavido-limbato; pedibus testaceis, tibiis et tarsis brunneis; abdomine infuscato.

Long. 35; elytr. 33·5, pronot. 9·75, latit. pronot. 13·5 millim.

Hab. Brazil (*Mus. Genavense*).]

HEMIBLABERA, Sauss.

Hemiblabera, Saussure, Societas Entomologica, 1893, p. 68.

Caput obtectum, sat compressum, vertice parum crasso, a pronoto valde superatum, fronte planulo. Pronotum et elytrorum margo lateralis marginata. Elytra cornea, ♀ sese intus haud vel levissime tegentia, ♂ variabilia; alæ in utroque sexu minimæ. Femora subtus in margine antico spinis paucis; femora anteriora et intermedia spinis apicalibus 1 : 2, posteriora 1 : 0. Lamina supra-analis minute incisa.

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* No female has ever been obtained which could be assigned to this species, based on males only. From this circumstance we think it probable that *B. fumigata* is not different from *B. thunbergi*, the former being based on males with completely developed wings, while *B. thunbergi* (♂) has been established on individuals with abbreviated wings.

Synopsis specierum.

a. Corpus lævigatum; lamina supra-analis basi transverse depressa, angulis rotundatis. Elytra abdominis segmenta 2–3 tegentia.

b. Elytra rotundato-trapezina, ♂ sese intus tangentia.—(*brunneri,* Sss.; Antilles, Porto Rico.)—[1. *manca,* Sss.]

bb. Elytra ♂ ovata, invicem remota. Femora posteriora subtus ante apicem spina 1. Metanotum in medio angulatum.—(*capucina,* Sss.)

aa. Corpus granulosum; elytra ♀ transverse trapezina, latiora quam longiora.—2. *granulata,* Sss.

[1. **Hemiblabera manca,** Sauss. (Tab. V. fig. 20.)

Hemiblabera manca, Saussure, Societas Entomologica, 1893, p. 68.

♂. Rufo-castanea; pronoto punctulato, utrinque rugulato, angulis acutis, circumcirca marginato, disco macula rufescente, margine anteriore flavicante; abdomine tenuiter granuloso, lamina supra-anali basi transverse depressa, angulis rotundatis, incisa. Elytra punctata, irregulariter elevato-venosa: trapezina, parum oblique truncata, ad 3um segmentum abdominis producta, sese intus leviter tegentia, margine apicali parum obliquo, angulis valde rotundatis. Femora anteriora spinis 1–4, reliqua 1–2 armata.

Long. 27; elytr. 9·25, pronot. 9·5, latit. pronot. 14·75 millim.

Hab. Antilles, Porto Rico (*Mus. Genavense*).

Blabera brunneri, Sauss. (Miss. Scient. Mex., Orthopt. p. 117. 15), described without name by Brunner de Wattenwyl (Nouv. Syst. Blatt. p. 383), is a larger insect, very closely allied to *H. manca.*]

2. **Hemiblabera granulata,** Sauss. (Tab. V. fig. 21.)

Hemiblabera granulata, Sauss. Societas Entomologica, 1893, p. 68.

♀. Rufo-castanea, tota dense granulata; pronoto fere semiorbiculari, postice haud marginato, angulis hebetatis, margine anteriore plus minus flavido. Meso- et metanotum flavo-varia; abdomen dense granulatum, marginibus granulato-crenulatis. Lamina supra-analis transverse quadrata, granulosa vel depressa, marginibus subtilissime crenulatis; cerci obtusissimi, breves. Elytra trapezina, oblique truncata, confertim granulosa, venulosa; margine postico vix arcuato; apice anguste rotundato, ad 2um segmentum abdominis attingente; margine interiore mesonotum vix superante. Alæ flavidæ, campo antico latiusculo, late rotundato. Femora omnia subtus spinis 2–4.

Long. 28·5; elytr. 8·75, pronot. 10, latit. pronot. 16 millim.

Hab. Mexico, La Antigua in Vera Cruz (*Mus. Genavense*).

CACOBLATTA, Sauss. *

Cacoblatta, Saussure, Societas Entomologica, 1893, p. 68.

Caput parum compressum, vertice rotundato, oculis maxime remotis. Pronotum parabolicum, antice truncatum. Elytra squamiformia, haud articulata. Alæ nullæ. Metanotum angulis productis. Femora 1, 2 subtus spinis apicalibus 1 : 2. Abdominis segmenta transversa, angulis haud productis. Lamina supra-analis transverse quadrata, vix incisa. Cerci brevissimi.

1. **Cacoblatta scabra,** Sauss. (Tab. V. fig. 19.)

Cacoblatta scabra, Saussure, Societas Entomologica, 1893, p. 68.

♀. Flavo-rufescens; subtus cum pedibus testacea. Vertex crasse punctatum; corpus de reliquo totum supra acute remote crasse granulatum, granulis dentiformibus, excepto in pronoto. Elytra rugulosa, elongato-trigonalia, apice anguste rotundato, vena principali prominula, metanotum parum superantia. Pedum

* κακὸς, weak (incompletely developed); *Blatta.*

spinæ castaneæ. Lamina supra-analis angulis rotundatis, marginibus denticulato-crenulatis. Abdominis segmenta supra utrinque ad marginem oblique flava; venter apice rufescens. Ultimum segmentum ventrale marginibus crenulatis, in medio postice vitta prominula, strigosa, utrinque ab illa depressum.

Long. 37; elytr. 6·5, pronot. 9·5, latit. pronot. 16·25 millim.

Hab. ? PANAMA (*Mus. Genavense*).

Tribus PANESTHINÆ.

This Tribe is represented in North America by the genus *Cryptocercus*, Scudd., and in South America by the genera *Dasyposoma* and *Parahormetica*. No species has yet been detected in Central America.

Fam. MANTIDÆ *.

This family † has been divided into "tribes" by H. de Saussure in his 'Mélanges Orthoptérologiques.' Stål has since proposed rather different divisions, introducing useful modifications in the former system, but also some others which we cannot accept. The classification of Brunner de Wattenwyl is a modified combination of these systems, and as this seems to be the most correct we have adopted it here.

Nomenclature of the pronotum, head, and legs.

PRONOTUM: The pronotum of Mantidæ forms over the insertion of the anterior coxæ a dilatation, sometimes altered in appearance when the margins of the pronotum are extended into lamellar wings (*Chæradodis*, *Rhombodera*, *Deroplatys*). The part of the pronotum extending behind the dilatation (pars postica) is the shaft or stem (*scapus*); that extending before the dilatation (pars antica) and joining the head is the collar (*collum*). This last part has at its base a transverse groove (*sulcus supra-coxalis*), which breaks at a right angle on each side, and frequently extends forwards in a direction parallel to the lateral margins of the collar, its two lateral branches joining again anteriorly, separating the borders of the collar from its disc.

HEAD: The parts of the head are:—Over the *labrum* the *clypeus*, in the form of a reversed trapezium, divided by a transverse carinula. Over the clypeus the facial shield (*scutellum faciale*), very characteristic in its various forms. Above this comes the forehead (*frons*), with the ocelli; over the forehead the *vertex*, which is either at the top of the face or thrown back to the occipital part of the head, when the *frons* becomes oblique. (HIERODULA.)

LEGS: The anterior pair of legs and their armature present important characters for the distinction of the

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* By Dr. HENRY DE SAUSSURE and Dr. LEO ZEHNTNER.

† Principal works referred to for this family:—

H. DE SAUSSURE, 'Mélanges Orthoptérologiques,' tome i. et tome ii., fascic. 3 et 4. Genève, 1870–72.

H. DE SAUSSURE, 'Mémoires pour servir à l'Histoire Naturelle du Mexique, des Antilles, etc.' IVe mémoire, Mantides. Genève, 1871.

H. DE SAUSSURE, ap. 'Mission Scientifique au Mexique etc.' (*Vide suprà*, p. 13.)

C. STÅL, 'Systema Mantodeorum.' Stockholm, 1877; in 8vo. (Bihang till k. Svenska Vet.-Akad. Handlingar, vol. iv. No. 10.)

J. O. WESTWOOD, 'Revisio Insectorum Familiæ Mantidarum.' London, 1889.

J. WOOD-MASON, 'A Catalogue of the Mantidæ,' Nos. 1, 2. Calcutta, 1889 et 1891.

C. BRUNNER DE WATTENWYL, 'Révision du Système des Orthoptères.' (*Vide suprà*, p. 13.)

genera. This is only to be expected, as these strongly raptorial limbs are the organs with which the Mantidæ capture the living prey on which they feed. The femora are armed with two rows of spines, and bear besides three typical spines at the base of their inferior face (*spinæ basales*, Sauss.; *spinæ discoidales*, Stål). When the femora are short and the tibiæ about equal to them in length, three discoidal spines only are present; and when the tibia shuts upon the femur, its claw falls between the discoidal spines and the first spine of the inner border. When the femora are longer and the tibiæ shorter, the claw of the tibia falls between the first and second spines of the inner row, in consequence of which the first spine is separated and thrown more against the disc. In this case the first inner spine has the appearance of a discoidal spine, and Stål numbers it as such and says that there are four discoidal spines. It would be more correct to count only three discoidal spines, and one separated spine of the inner row; but to facilitate diagnosis it is shorter and more convenient to count, as Stål has done, three or four discoidal spines.

The Mantidæ are mimetic insects, green or grey in colour, and they are difficult to detect amongst the leaves of bushes and trees. The males, which fly about in search of the females, are more easily seen, having generally longer and membranaceous elytra, and frequently less brightly coloured wings.

By means of their very strongly raptorial legs they are enabled to prey not only on insects, but also on all kinds of small animals, especially on small birds, as noticed by Robert Hudson *.

Several genera and species of the northern parts of South America which have not yet been detected in Central America no doubt extend into this portion of the American continent, as shown by the existence in the collections we have examined of various small larvæ which do not belong to the known Central-American genera, but seem to agree with Brazilian types.

Conspectus tribuum †.

1. Tibiæ anticæ margine externo inermi vel tantum tuberculis minutissimis instructo. (Pronotum coxis anticis haud longius.)—[Amorphoscelinæ.]

1, 1. Tibiæ anticæ margine externo spinuloso.

2. Femora anteriora margine interno spinis æqualibus vel spinis alternis minoribus, ac majoribus armato. Antennæ marium setaceæ vel raro unipectinatæ.

3. Pedes intermedii et posteriores teretes, tibiæ haud multicarinulati.

4. Corpus et pedes simplices, haud lobata. Antennæ setaceæ.

5. Pronoti pars antica anterius haud coarctata, scilicet collum nullum efficiens, antice ad caput truncata vel excisa.—Orthoderinæ.

5, 5. Pronoti pars antica anterius coarctata; pronotum hoc propter supra coxas latius; collum angustum vel parabolicum (rare dilatatum), antice ad caput rotundatum.—Mantinæ.

4, 4. Corpus vel pedes lobata, vel vertex conoideo productus.—Harpaginæ.

3, 3. Pedum intermediorum et posteriorum femora superne carinata, tibiæ multicarinulatæ. (Pronotum elongatum.)—Vatinæ.

2, 2. Femora anteriora margine interno inter spinas longiores spinis brevioribus (typice tribus) armata. Antennæ marium bipectinatæ. (Caput appressum, vertice in conum producto.) —Empusinæ.

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* *Cf.* Burmeister, Berl. ent. Zeitschr. 1864, pp. 234–236.

† Secundum Brunner de Wattenwyl.

Tribus ORTHODERINÆ.

Orthodériens, Saussure, Mélang. Orthopt. i. 3e fasc. p. 159, et Suppl. au 3e fasc. p. 364.
Eremophilidæ, Stål, Systema Mantodeorum, p. 6 (1877); Wood-Mason, Cat. of Mantid. p. 9.
Orthoderidæ, Brunner de Wattenwyl, Révis. du Syst. des Orthopt. pp. 57, 58.

MANTOIDA, Newman.

Mantoida, Newman, Ent. Mag. v. p. 178 (1838); Westwood, Revis. Mantid. p. 1.
Chæteessa (Divisio II.), Saussure (nec Burm.), Mém. Mex., Mantid. p. 14 (1871); Brunner de W. (ex parte), Révis. Syst. Orthopt. p. 59.
Hoplophora (ex parte), Perty, Del. Anim. Art. Bras. p. 126 (1830).
Annia, Stål, Syst. Mantod. p. 10 (1877); Wood-Mason, Cat. of Mantid. p. 10.

1. **Mantoida maya,** sp. n. (Tab. X. figg. 26, 27.)

♀. Fulvo-testacea. Caput validum; oculi prominuli, subparalleli. Ocelli mediocres. Cranium nigrum, vitta media flava; frons ad ocellos nigro-varia. Antennæ nigro-fuscæ, 1° articulo subtus testaceo. Pronotum nigrum, vitta media et marginibus lateralibus flavis. Elytra et alæ nebuloso-hyalina, venis brunneo-ferrugineis, margine costali obscuriore; stigmate elytrorum vitreo. Pedes testacei. Femora anteriora crassa, intus basi angulata, spinis nigris; tibiæ anticæ supra apice nigro-notatæ, spinis apice nigro: intus 7, ungue longiore; extus 4. Tibiæ intermediæ et posticæ subtus biseriatim remote pilosæ, apice densius spinuloso-pilosæ. Tarsi biseriatim spinulosi. Abdomen gracile, fusco-nigrum, subtus et apice testaceum vel fusco-varium. Cerci laminam supra-analem vix superantes, laminæ infra-genitali æquilongi. Lamina supra-analis transversa, obtusangulata.

Var. Caput, antennarum articulus primus et pronotum testacea, immaculata.

♀. Long. 15·5; pronot. 2·25, femur ant. 3·25, elytr. 12·5, latit. elytr. 3·5 millim.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

This species is very closely allied to *M. fulgidipennis*, Westw., from the Amazons, but is rather different in colour. It has not a brown stigma on the elytra, and the tarsi are not annulated with black.

CHŒRADODIS, Serv.

Chæradodis, Serville, Revue Méthod. des Orthopt. p. 18 (1831), and Orthopt. p. 206; et auctt.
Craurusa, Burmeister, Handb. ii. p. 542.

The American species of this genus differ from the Asiatic in having the anterior femora more slender, with the superior margin straight or subsinuated, and with the black macula of the inner side placed against the inferior margin; their anterior coxæ also in rest do not reach so far back as the prothorax. In the Asiatic forms the anterior femora are wider, with their superior margin arcuated, and with the black macula placed against the superior margin, the anterior coxæ reaching backwards beyond the prothorax.

The American species may be separated as follows:—

Inner face of the anterior femora:
a. without black spot.—[*strumaria,* L.]
aa. with a black spot.—[*cancellata,* Serv.], [*laticollis,* Serv.], [*rhomboidea,* Stoll], *rhombicollis,* Latr., *servillei,* Wood-Mas., [*stollii,* Wood-Mas.].

The anterior margin of the pronotum over the head :

a. ♀ scarcely, ♂ not emarginated.—[*strumaria,* L.], [*cancellata,* Serv.], [*laticollis,* Serv.], [*rhomboidea,* Stoll], [*stollii,* Wood-Mas.].

aa. distinctly emarginated.—*rhombicollis,* Latr., *servillei,* Wood-Mas.

1. **Chœradodis rhombicollis,** Latr. (Tab. IX. fig. 3.)

Mantis rhombicollis, Latr. in Humb. et Bonpland's Obs. Zool. ii. p. 103, t. 39. figg. 2, 3 (♂).

Chœradodis rhombicollis, Wood-Mason, Journ. Asiat. Soc. Beng. xlix. pt. 2, p. 82 (♀ ♂); ibid. liii. pt. 2, p. 240, figg. 6 (♂), 7 (♀); Cat. of Mant. p. 14. 20, figg. 10 (♀), 11 (♂) (pronot.); de Borre, Liste des Mantes du Mus. Roy. de Belg. (Ann. Soc. Ent. Belg. 1883, p. 62), et Comptes-rendus Soc. Ent. Belg. 1883, pp. cxliv, cxlv (♀ et nympha, figg.); Westw. Revis. Mantid. p. 3, t. 7. figg. 3 (♂), 4 (♀).

Chœradodis peruviana, Serv. Orthopt. p. 207 (♂).

Chœradodis strumaria, Stål, Syst. Mant. p. 15 (♀ ♂).

Hab. PANAMA, Bugaba 800 to 1000 feet (*Champion*).—COLOMBIA; GUIANA; ECUADOR, Guayaquil.

The specimens obtained by Mr. Champion were attracted to light.

2. **Chœradodis servillei,** Wood-Mason. (Tab. IX. figg. 1, 2.)

Chœradodis servillei, Wood-Mason, Journ. Asiat. Soc. Beng. xlix. pt. 2, p. 83 (♀ et nympha); ibid. liii. pt. 2, p. 240, figg. 8 (♀), 3 (nympha); Cat. of Mant. p. 14. 21, fig. 12 (♀); Westw. Revis. Mant. p. 3.

♀. Profunde prasina. Caput triangulare, oculis valde tumidis. Scutellum faciale quam altior sesquilatior, late pentagonalis, margine supero valde obtusangulo, angulo rotundato, angulis lateralibus rotundatis, marginibus lateralibus parallelis. Ocelli minuti in trigonum latissimum brevissimum exserti. Pronotum robustum, latissime dilatatum; latius quam longius, rotundato-pentagonale, antice supra caput valde excisum; emarginaturæ margo bisinuatus, angulis utrinque acute obtusis. Scuti margo anterior utrinque subarcuatus, subtilissime crenulatus; margo posterior transversus, rectus. Anguli laterales et posteriores valde rotundati. Superficies utrinque lineis 3–5 arcuatis, subprominulis, marginibus externis plus minus parallelis, obferens. Puncti 2 impressi in tertia parte, sulcus in quarta parte anteriore pronoti perspicui. Elytra abdomen superantia, opaca, ovato-lanceolata, recta, foliam symetricam simulantia. Eorum margo costalis et suturalis æqualiter arcuatus; campus marginalis haud dilatatus, quartam partem latitudinis elytri efficiens; campus discoidalis maculam callosam albidam ante tertiam partem longitudinis ad venam mediam positam præbens; venæ discoidales oblique pectinatæ. Alæ hyalinæ, ad marginem costalem basi et apice virescentes; margo costalis apice sat fortiter arcuatus; apex ♀ obtusus, ♂ modice acutus. Pedes antici mediocres. Coxæ in marginibus omnibus spinulosæ. Femora latere interno macula nigra ovali ultra incisuram posita, necnon punctis nigris in basi spinarum majorum intercalatarum; spinæ apice nigræ; margo externus spinis 4. Tibiæ spinis 14:14.

♂. Scutellum faciale paulo magis pentagonale, paulo minus altum quam in ♀. Ocelli in trigonum fere æquilaterale exserti. Pronoti folia minus grandis, rhomboidalis; ejus diagona linea paulo ante medium transcurrens; ejus margo posterior truncatus, minus latus quam emarginatura antica; ejus margines latero-postici vix arcuati, usque ad alas convergentes. Elytra quam in ♀ longiora ac angustiora, stigmate albido ante quartam partem exserto. Femora anteriora spina apicali in margine externo instructa.

Var. *a.* Macula nigra femorum anteriorum incisuram unguicularem haud transgrediens.—*b.* vel illam transgrediens.—*c.* Elytra et pronotum maculis 2 fulvidis vel fusco-cinctis, illas foliarum arbustorum imitantibus, notata.—*d.* In individuis decoloratis, vel per liquorem adulteratis elytra nonnunquam nigro-punctulata.

♀. Long. 74; pronot. 30, femur ant. 21, elytr. 50, latit. elytr. 20·5 millim.

♂. Long. 61; pronot. 21, femur ant. 15, elytr. 55, latit. elytr. 16 millim.

Hab. GUATEMALA, Panima in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA, Caché (*Rogers*); PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

This species is very closely allied to *C. rhombicollis*, Latr. It has the pronotum (♀) similarly shaped; but the elytra are not quite so wide, with the costal field narrower and the costal margin less arcuated beyond the middle. The black marking on the anterior femora is placed beyond the unguicular sulcus and distant from the base; while in *C. rhombicollis* this marking is placed before the sulcus and extends towards the base.

In the shape of the pronotum *C. servillei* agrees exactly with the figures of *C. rhombicollis* given by Westwood and Wood-Mason. Wood-Mason's figure of the pronotum of *C. servillei* (♀) is too much rounded, not sufficiently pentagonal, and not narrowed enough posteriorly, with the anterior margin rather too oblique.

Tribus MANTINÆ.

Mantiens, Saussure, Mém. Mex., Mantid. pp. 7, 27; Mélang. Orthopt. i. 3e fasc. pp. 171, 399, ii. 4e fasc. p. 18; Miss. Scient. Mex., Orthopt. pp. 230, 233.

Mantidæ, Stål, Syst. Mant. pp. 6, 18; Brunner de W. Révis. Syst. Orthopt. pp. 58, 60.

Synopsis generum.

1. Corpus et elytra glabra, haud fimbriata. Coxæ anteriores apice margine supero haud sensim dilatato.
   2. Lamina supra-analis transversa, truncata vel rotundata.
      3. Prothorax brevis, quam coxæ anteriores haud longior, subrhomboidalis, haud carinatus, posterius plus minus coarctatus. Femora anteriora crassa ac brevia, spinis discoidalibus 3, prima minuta; tibiæ extus et ad basin spinosæ, spinis 11–18.—Sexus dissimiles, ♀ elytris coriaceis, ♂ membranaceis. Caput crassiusculum, vertice valde 4-sulcato. Alæ ♀ coloratæ.—(Stirps *Acontista*.)
         4. Tibiæ anteriores margine externo spinis brevissimis, obtusis vel oblique truncatis, contiguis, armatæ, simul sumptis marginem undulatum vel crenulatum efficientibus; ultima sola valida acuta. Pronotum pone medium constrictum. Alarum campus anterior posteriorem haud superans; sinu anali igitur nullo; vena ulnari indivisa.—ACONTISTA, Burm.

      4, 4. Tibiæ anteriores in utroque margine spinis normalibus elongatis, acutis, invicem haud contiguis armatæ. Pronotum posterius haud constrictum. Alarum campus anterior posteriorem superans; sinu anali igitur distincto; vena ulnari ♀ furcata.—[TITHRONE, Stål.]

3, 3. Prothorax elongatior, quam coxæ anteriores longior; ejus pars posterior quam collum longior, plus minus carinata. Femora anteriora spinis discoidalibus 4. Tibiæ anteriores margine externo spinis 9–11 armatæ.—Sexus valde dissimiles. Elytra ♀ coriacea, abbreviata, ♂ elongata, membranacea. Alæ ♀ fuscæ vel fasciis coriaceis flavis interruptis obsitæ, vena ulnari indivisa vel furcata; ♂ longæ, totæ membranaceæ, vena ulnari furcata vel biramosa.—(Stirps *Stagmomantis*.)

4. Pedes intermedii et posteriores graciles, longi, metatarso elongato. Pronotum carinatum, haud tuberculatum, collo antice attenuato.

5. Pronotum saltem dimidia parte postica carinatum; ejus pars postica coarctata quam collum angustior. Elytra ♀ apice haud attenuata (nisi quando sunt rudimentaria), late rotundata vel angulata; area membranacea anali pellucida vel nebulosa. Alarum vena ulnaris ♀ furcata vel indivisa, ♂ biramosa. Tibiæ anteriores margine externo basi breviter inermes.—STAGMOMANTIS, Sss.

5, 5. Pronotum longissimum; ejus pars postica tota valde carinata, ♀ latiuscula, parallela. Elytra et alæ ♀ brevissima; elytra apice attenuata; area membranacea anali nigro-ænea. Alarum vena ulnaris ♀ ♂ furcata vel indivisa. Tibiæ anteriores utrinque et ad basin spinosæ.—PHASMOMANTIS, Sss.

4, 4. Pedes intermedii et posteriores brevissimi, femoribus crassiusculis, tarsis brevibus. Pronotum anterius subgibberosum, pone sulcum coxalem bituberculatum, collo antice haud attenuato, rotundato. Elytra et alæ ♀ abdomine breviora, illis generis *Stagmomantis* formis similia, sed elytrorum area membranacea anali nigro-ænea; ♂ elongata, hyalina.—MELLIERA, Sss.

2, 2. Lamina supra-analis triangularis vel lanceolata. (Femora anteriora spinis discoidalibus 4.)

3. Femora anteriora extus spinis 6–7. Tibiæ anteriores utrinque spinis 15 vel plus. Elytra ♀ sat brevia.—(Stirps *Macromantis*.)

4. Abdomen latum. Elytra ♀ cordiformia, plerumque acuminata, campo marginali latissimo, margine costali valde arcuato; ♂ elongata, hyalina. Cerci teretes.

5. Pronotum longissimum, robustum, depressum, parte antica utrinque dilatata, fere elongato-hexagonali, marginibus lateralibus parallelis. Elytrorum ♀ campus marginalis venas validas, arcuatas, remotas obferens. Alæ hyalinæ. Femora antica extus spinis 7. Cerci longissimi, graciles. Species maximæ. —MACROMANTIS, Sss.

5, 5. Pronotum mediocre, parte antica ovata, parum ampliata. Elytrorum ♀ campus marginalis venis confertis irregularibus impletus. Alæ in venulis transverse flavo-fasciculatæ. Femora antica extus spinis 6. Cerci modice longi, teretes. Species minores.—[METRIOMANTIS, gen. n.]

4, 4. Corpus gracile. Abdomen fusiforme. Elytra ♀ breves, elliptica, campo marginali angusto. Pronotum longum, gracile. Cerci longissimi, compressi.—HICETIA, g. n.

3, 3. Femora anteriora margine externo spinis 4–5 (ultima nonnunquam deficiente),

4. consueto-modo obliquis, fortioribus.

5. Pronotum breve, rhomboidale. Oculi superne acuti. Abdomen ♀ dilatatum. Cerci teretes.—(Stirps *Ameles*.)

6. Elytra in utroque sexu rudimentaria.—YERSINIA, Sss.

6, 6. Elytra et alæ ♂ condite explicata.—LITANEUTRIA, Sss.

5, 5. Pronotum longissimum. Corpus totum bacillare. Pedes gracillimi. Elytra et alæ abbreviata: elytra alis breviora; alæ splendide coloratæ. Cerci compressi, lamellares.—ANGELA, Serv.

4, 4. perpendicularibus, longioribus, gracilibus, acutissimis. Pronotum modice longum, collo gibberoso. Elytra irregulariter polygonali reticulata. Alæ ♀ coloratæ. Oculi rotundati, tumidi. Vertex elevatus, utrinque ad oculos tuberculatus. Femora antica extus granulata.—(Stirps *Gonatista*.)

5. Tibiarum anteriorum spinæ externæ normales. Collum pronoti anterius subparabolicum. Femora antica extus valde granulata, margine superiore recto.—Sexus dissimiles. Feminæ elytris coriaceis, abdominis longitudine; alis pictis. (Mares ignoti.)—[HAGIOMANTIS, gen. n.]

5, 5. Tibiarum anteriorum spina externa 6ª ab apice, reliquis longior.

6. Pronoti pars antica parallela, anterius haud coarctata, apice truncata. Tibiæ anticæ extus basi ante spinam typicam abnormam spinulis 3–4. Femora antica extus serie tuberculorum remotorum ornata, margine supero sinuato, basi compresso-dilatato.—Sexus dissimiles. Feminæ elytris semi-membranaceis, abdomine brevioribus; alis infuscatis. Mares elytris et alis longis, vitreis, griseo-conspersis.—[GONATISTA, Sss.]

6, 6. Pronoti pars antica ovata. Tibiæ anticæ extus basi ante spinam typicam elongatam spinis 1–2. Femora antica extus subgranulata.—Sexus consimiles; elytris elongato-ellipticis, subcoriaceis, virescenti- et fusco-irroratis; alis infuscatis.—LITURGOUSA, Sss.

1, 1. Elytra et alæ in marginibus pedesque subtiliter pubescentia. Coxæ anteriores margine supero-antico apice breviter lamellari-ampliato. Species minutæ, graciles, elytris et alis ♀ ♂ membranaceis, hyalinis vel infuscatis.—Insecta Americana.—(Stirps *Miopteryx*.)

2. Corpus gracile. Abdomen bacillare, nec carinatum nec tuberculatum. Femora postica filiformia.

3. Uterque sexus alatus. Elytra et alæ ampla; alarum vena ulnari biramosa. Femora antica brevia, robusta; tibiæ compressæ, fere dimidia longitudine femorum, utrinque spinis 8–9 brevibus, margines complete occupantibus. Lamina supra-analis triangularis, abdominis apicem haud attingens. Prothorax brevis, rhomboidalis.

4. Frons mutica; vertex transversus, oculos vix superans, lobis juxtaocularibus nullis.—MIOPTERYX, Sss.

4, 4. Frons mucronata; vertex oculis altior, utrinque juxta oculos in lobum rotundatum plus minus tumidum elevatum.—PSEUDOMIOPTERYX, Sss.

3, 3. Feminæ apteræ. Elytra et alæ ♂ plerumque angustiora; alarum vena ulnari ultra medium furcata. Femora antica gracilia; tibiæ breviores. Prothorax gracilis.

4. Tibiæ anticæ normales, in utroque margine serie continua spinarum armatæ; ultima marginis interni haud vel vix ad superum rejecta; margo internus tota longitudine spinosus. Corpus elongatum, gracillimum.

5. Tibiæ anticæ spinulis intus 8–9, quarum ultima normalis. Lamina supra-analis elongata, lanceolata, retro prominula.—MUSONIA, St.

5, 5. Tibiæ anticæ spinulis intus 7–9 (primis 3 minimis), quarum ultima ungue contigua. Lamina supra-analis retro vix prominula.—MIONYX, Sss.

4, 4. Tibiæ anticæ spinis longiusculis 3–5 armatæ (scilicet intus 1, extus 1–2, superius 1–2), ultima marginis interni ad superum dejecta.

5. Corpus plerumque elongatum. Tibiæ anticæ brevissimæ, rectæ, spina dorsali unica. Frons mutica.

6. Tibiæ anticæ rudimentariæ, quam unguis haud longiores, tantum spinis apicalibus 3 armatæ (utrinque 1, superius 1). Pedes antici filiformes; femora in $\frac{2}{3}$ longitudinis inermia. Pronotum longissimum, gracillimum.

Frons planata, supra ocellos sulco transverso arcuato exarata.—THESPROTIA, St.

6, 6. Tibiæ anticæ quam unguis longiores, spinis utrinque 2, superius 1 armatæ. Femora formæ consuetæ, in tertia parte apicali attenuata.

7. Caput transversum; frons humilis, gibberosa. Vertex transversus, quam oculi haud altior, utrinque lobo juxtaoculari.

8. Spinæ laterales tibiarum anticarum normales, rectæ, a marginibus divergentes, saltem a margine interno.—OLIGONYX, Sss.

8, 8. Spinæ utrinque a basi curvatæ, in margine incumbentes.—HARPAGONYX, Sss.

7, 7. Caput æqualiter altum ac latum, superius valde compressum; fronte elata, plana, carinula semicirculari notata. Vertex transversus, quam oculi altior, utrinque in dentem trigonalem juxtaocularem productus. —SPANIONYX, Sss.

5, 5. Tibiæ anticæ graciles, dimidium femur fere æquantes, *subdecurvæ* (margine supero subsinuato), supra rotundatæ ac punctatæ; spinis intus 2, superius 2 apicalibus armatæ. Frons supra ocellum inferum mucronata. Femora anteriora gracilia, dimidia parte apicali valde attenuata.—Caput transversum, rotundatum, fronte parum alta, subtrigibbosa; ocellis ad tuberculos exsertis. —Pronotum breve, gracile. Elytra et alæ ampla, obtusa.—THRINACONYX *, Sss.

2, 2. Corpus crassiusculum. Abdomen ♀ graciliter subfusiforme, supra carinatum, segmentis apice acute compressis. Femora postica basi incrassata.—Pronotum breve, rhomboidale. Pedes antici crassi, femoribus trigonalibus; tibiis normalibus, subtus latiusculis. —Feminæ apteræ. Marium elytra et alæ ampla, abdomenque superantia; elytrorum vena ulnari furcata.—BANTIA, St.

ACONTISTA †, Burm.

Acontistes, Burmeister (ex parte), Handb. ii. p. 542 (1839); Stål, Syst. Mant. p. 85; Brunner de W. Rév. Syst. Orthopt. p. 61.

Acontista, Saussure, Mélang. Orthopt. i. 3e fasc. p. 175 (1870), ii. 4e fasc. p. 21; Mém. Mex., Mantid. p. 31; Miss. Scient. Mex., Orthopt. p. 236; Westwood, Revis. Mantid. p. 22.

Acontista is peculiar to the hot regions of America. It is a compact genus, composed of small species, all of which have the same form and are very similarly coloured.

The males and females differ very much—the males having the elytra and wings

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* The genus *Astape*, Stål, might be placed next to this. It possesses special characters in the proportions of its legs. (*Patria ignota.*)

† The name *Acontistes* being preoccupied in Aves (Sundevall, 1835), we adopt *Acontista*, Saussure.

more or less hyaline, the females opaque elytra and coloured wings; consequently the males cannot be attributed to their females with certainty unless caught *in copula*. Moreover, great irregularities are apparent in the corresponding parts of the two sexes, *i. e.* in two species with very similar females, *A. concinna* and *A. mexicana*, the male of the first resembles somewhat its female, having maculated elytra and coloured wings, adorned with rufous as in the female, while the male of the second is very different from the female, having hyaline or clouded elytra and hyaline wings; and, conversely, *A. concinna*, ♀, with broad elytra, has a male with very slender elytra, while *A. mexicana*, ♀, with narrower elytra, has a male with broad elytra.

All the females have much the same typical coloration, the wings being anteriorly brick-red, posteriorly dark brown, and partly hyaline. The brown colour sometimes extends over the whole wing (*A. truncata*), or it may be reduced to a mere arcuated band, leaving a great part of the posterior field hyaline (*A. amœnula*). It should be mentioned that the brown parts of the wings are always of a very brilliant dark colour (tortoise-shell-brown), with the transverse venulæ white or hyaline. The abdomen of the females is generally wide and dilated, sometimes more fusiform; but in certain cases it is very narrow, as in the males (*A. amœnula*).

The males have membranaceous elytra, with the marginal field opaque-green (rarely membranaceous), their costal margin becoming hyaline at its end. These organs seem to be variable in each species, becoming more or less elongated and more or less slender or broad.

In the females the facial shield is characteristic, being either transverse, narrow, and flat, or more elevated, and divided into three parts, which are excavated. In the males this structure is more obsolete and less characteristic.

In both sexes the supra-anal plate is rather prominent, but truncate and quite transverse.

The armature of the anterior legs is the most striking character of this genus. The tibiæ are furnished with numerous spines, which extend over their entire length; those of the exterior margin, sometimes eighteen in number, are truncated, very short, and contiguous to each other, forming together a crenulated border, as in the African genus *Harpax*. Stål, on this account, has removed the genus *Acontista* into the tribe Harpaginæ; but we, as also Herr Brunner de Wattenwyl, regard it as belonging to the true Mantinæ. The anterior femora are stout, and the tibiæ sufficiently long to reach, when drawn inwards, as far as their base; the claw, therefore, is not placed between the first and second spines of the inner row of the femora, and, in consequence, we find three discoidal spines only (*comp.* p. 124), and no sulcus on the inner face of the femur. When the tibia is closed upon the femur, the claw is placed between the discoidal spines and the first spine of the inner row.

The species of *Acontista* appear to be numerous, and numbers of them certainly remain

to be discovered. The females of the various species are so closely allied that they can only be separated by small differences in size and in the coloration of the wings; and they will certainly be confounded if these differences are not pointed out in a comparative synopsis, including all the known species. The males are more variable and still more difficult to determine than the females.

The first two species have black wings in the females, and they form a special group, having also the anterior femora and coxæ maculated on the inner side. The other species with tricoloured wings and immaculate anterior legs form a second group.

The distribution of the species seems to be very local, each being confined to a limited region.

Synopsis specierum.

I.

1. *Feminæ* :

a. Elytra et alæ complete explicata.

b. Elytra latiuscula, tota coriacea, margine costali arcuato.

c. Alæ totæ fuscæ, apice macula pallida; elytra stigmate nigro, ultra medium oblique fusco-bifasciata. Scutellum faciale tripartitum.

d. Grisea ; alæ haud hyalino-limbatæ.—[1. *truncata*, F.]

dd. Flavescens ; alæ margine apicali hyalino.—[2. *westwoodi*, sp. n.]

cc. Prasinæ; elytra tota prasina, stigmate concolore seu nullo. Scutellum faciale transversum, planum. Alæ tricolores, campo posteriore fusco, anteriore lateritio :

d. et ad apicem rufo, campo posteriore apice vix hyalino-limbato.—[3. *concinna*, Perty.]

dd. minor, alæ margine apicali toto hyalino-limbato.—[4. *paraensis*, sp. n.]

bb. Prasinæ. Elytra minus lata, apice attenuata, luteo-arcuato-fasciata, margine costali parum arcuato, campo marginali angustiore; apice et parte distali marginis suturalis partim vitreis. Alæ tricolores.

c. Elytra stigmate nigro ; alæ dimidiatæ, antice rufæ, postice fuscæ, margine apicali et externo latiuscule hyalino.

d. Pars rufa alarum basi dilatata, quam pars fusca latior.—5. *mexicana*, sp. n.—[6. *multicolor*, Sss.]

dd. Gracilis, minor; alarum pars rufa angusta, parallela ; campus posterior fere ad basin infuscatus.—7. *fraterna*, sp. n.

cc. Elytra stigmate concolore ; alæ antice rufæ, apice et postice vitreæ, fascia grandi arcuata fusca.

d. Alarum fascia rufa basi vix dilatata ; campus posterior magna parte vitreus ; ejus fascia fusca totum marginem liberans.—[8. *cayennensis*, sp. n.]

dd. Alarum fascia rufa basi retro dilatata ; fascia fusca marginem posticum includens.—[9. *amœnula*, Gerst.]

aa. Elytra et alæ rudimentaria squamiformia.—[13. *brevipennis*, Sss.]

1, 1. *Mares* * :

a. Alæ margine costali et basi ima rufis :

b. campo anteriore rufo, posteriore vitta arcuata fusca ad marginem anteriorem perducta ; elytris angustis, stigmate prasino.—[3. *concinna*.]

bb. area costali anguste rubra ; elytris stigmate fusco.

c. Elytra lata, basi macula anali fusca ; alæ fusco-variæ.

d. Elytra et alæ fusco-inquinata.—5. *mexicana*, var. *inquinata*.

dd. Elytra et alæ hyalina, ad basin macula fusca.—5. *mexicana*, var. *quadrimaculata*.

cc. Elytra angusta, hyalina ; alæ postice macula fusca.—10. *cordilleræ*, Sss.

aa. Elytra et alæ hyalina, haud rufo-picta.

b. Elytra puncto stigmatico fusco, campo marginali viridi-opaco.

c. Majores. Alæ area costali infuscata, apice plus minus fusco-limbato ; femora anteriora intus macula fusca.—[1. *truncata*] ; [2. *westwoodi*].

cc. Minores, area costali alarum virescente. Elytra et alæ hyalina.—11. *vitrea*, sp. n.

bb. Elytra stigmate decolore, campo marginali pellucido ; alis fusco-maculatis.—[12. *bimaculata*, sp. n.]

II.

Feminæ :

1. *Abdomen* :

a. dilatatum.—[1. *truncata*] ; [2. *westwoodi*] ; [3. *concinna*] ; [4. *paraensis*] ; 5. *mexicana* ; [6. *multicolor*].

aa. fusiforme, minus dilatatum :

b. sat latum.—[7. *fraterna* ; 8. *cayennensis*.]

bb. angustissimum, lineare.—[9. *amœnula*.]

2. *Scutellum faciale* :

a. tripartitum, in medio elevatius.—[1. *truncata*] ; [2. *westwoodi*] ; 5. *mexicana* ; [6. *multicolor*] ; 7. *fraterna* ; [8. *cayennensis*].

aa. angustum, transversum, planum.—[3. *concinna*] ; [4. *paraensis*].

Mares :

1. *Abdomen* :

a. gracile, parallelum.—[3. *concinna*] ; 11. *vitrea* ; [12. *bimaculata*].

aa. leviter dilatatum, subfusiforme.—5. *mexicana*, var. *inquinata*.

2. *Elytra* :

a. campo marginali membranaceo,

b. stigmate nigro.—[1. *truncata*] ; [2. *westwoodi*].

bb. stigmate nullo.—[12. *bimaculata*].

aa. campo marginali viridi-opaco, stigmate nigro.—*reliquæ species*.

[1. **Acontista truncata,** Fabr.

Mantis truncata, Stoll, Kakkerl. t. 3. fig. 10 (♀) ; Fabr. Ent. Syst. ii. p. 17. 20 (♀) ; Licht. Trans. Linn. Soc. vi. p. 31. 35 ; de Haan, Bijdrag etc. p. 75. 35 (♀).

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* *A. major*, Sss., seems to belong to the genus *Melliera*.

Acontista truncata, Sauss. Mém. Mex., Mantid. p. 33. 1 (♀); Miss. Scient. Mex., Orthopt. p. 237 (♀); Westw. Revis. Mantid. p. 23 (nec p. 45).
Mantis fuscata, Stoll, Kakkerl. t. 19. fig. 70 (♀) (var.?).
Mantis fusca, Oliv. Encycl. Méth., Ins. vii. p. 635. 53 (♀).
Mantis multistriata, Serv. Orthopt. p. 199. 32 (♀) (var.?).
Mantis perspicua, Fabr. Mant. Ins. p. 230. 36; Ent. Syst. ii. p. 24. 48 (♂); Oliv. Encycl. Méth., Ins. vii. p. 631. 27 (♂).
Acontista perspicua, Sauss. Mém. Mex., Mantid. p. 33. 2 (♂); Miss. Scient. Mex., Orthopt. p. 238, t. 6. fig. 18 (♂); Westw. Revis. Mantid. p. 23.
Acontista elegans, Sauss. Bull. Soc. Ent. Suisse, iii. p. 63 (♂).

♀. Sat valida, grisea vel fulvo-fusca. Scutellum faciale trifoveolatum, lobo medio superne truncato; verticis lobus medius convexus, angustus, parum prominulus. Alæ totæ fuscæ, campo anteriore ad apicem macula pallida, campi postici margine externo haud vitreo-limbato. Abdomen latum. Pedes fusco-fasciati; coxæ anticæ extus fasciis fuscis 2–3, intermedia in latere interno breviter producta; femora latere interno maculis 3 majoribus nigris vel margine supero toto late nigro-marmorato necnon spinis marginis interni alternatim nigris; tibiæ spinis intus 15, extus 15–16.

♂. Majusculus, griseus vel prasinus. Elytra et alæ vitrea, venis badiis; elytra stigmate minuto fusco, campo marginali viridi-coriaceo; alarum campus marginalis ultra medium vitreus vel infuscatus, apex campi antici anguste fusco-limbatus necnon margo posterior campi postici leviter anguste infuscatus. Pedes fusco-annulati. Femora anteriora latere interno ante medium ad marginem superiorem macula fusca; tibiæ spinis 14 : 16.

♀. Long. 24·5; pronot. 7·25, femor. ant. 7·6, elytr. 16, latit. elytr. 5·5 millim.

♂. Long. 26–28·5; pronot. 6·7, femor. ant. 5·5–6·75, elytr. 20–22, latit. elytr. 6 millim.

Hab. GUIANA, Cayenne (*Prudhomme, Mus. Genavense*: ♀ ♂).

In this species the male is often larger than the female.]

[2. **Acontista westwoodi,** sp. n.

Acontista truncata, Westw. Revis. Mantid. p. 45 (nec p. 23), t. 9. figg. 1 (♀), 3 (♂).

♀. Major, flavescens (vel in vivis prasina). Scutellum faciale trifoveolatum, lobo medio superne truncato vel obtusissime angulato; verticis lobus medius rotundato-tumidus, fere tuberculiformis. Alæ campo anteriore apice macula flavicante, postice hyalino, margine externo campi postici distincte hyalino-limbato. Coxæ anticæ latere interno macula media nigra; femora intus maculis 3 fuscis, 2 ad marginem superiorem, 1 ad basin marginis inferi; tibiæ spinis 14 : 16.

♂. Mare *A. truncatæ* simillimus; elytris leviter brunneo-tinctis.

♀. Long. 29; pronot. 8, femor. ant. 8·5, elytr. 19·5, latit. elytr. 7·25 millim.

♂. Long. ca. 29 millim.

Hab. COLOMBIA (*Mus. Genavense*: ♀); BRAZIL (*Westwood*: ♀ ♂).]

[3. **Acontista concinna,** Perty.

——, Seba, Thesaurus, iv. t. 67. fig. 10.
Mantis oratoria, de Geer, Ins. iii. p. 405. 5, t. 37. fig. 2 (♀) (1767).
Mantis concinna, Perty, Del. Anim. Artic. Bras. p. 117, t. 23. fig. 5 (♀); Serv. Orthopt. p. 201. 36 (♀); Charp. Orth. depict. t. 27 (♀ ♂); Fieber, Lotos, iii. p. 96. 6.
Acontista concinna, Sauss. Mém. Mex., Mantid. p. 38. 5; Westw. Revis. Mantid. p. 23.
Mantis tricolor, Burm. Handb. ii. p. 543. 54 (♀).
Mantis 4-maculata, Serv. Orthopt. p. 201. 35 (♂).
Mantis aurantiaca, Burm. Handb. ii. p. 531. 3 (♂).

♀. Prasina. Caput vertice declivi, sulcato; scutello faciali angusto, transverso, toto plano, superne in medio truncato. Pronotum basi parum constrictum. Elytra tota prasina, lata, campo marginali latiusculo, margine costali toto arcuato. Alæ antice lateritiæ, postice fuscæ, albo-lineatæ (parte rufa parallela, basi haud dilatata); campo anteriore et ad apicem rubro (apice haud hyalino), apice parum coarctato, ante apicem macula fusca; campo posteriore margine externo anguste irregulariter albido-vitreo, vena dividente apice parum arcuata. Abdomen sat latum, fusiforme. Tibiæ anticæ spinis 12 : 15.

Var. Alarum venæ radiatæ campi postici albidæ.

♂. Scutellum faciale superne truncatum vel angulatum. Pronotum postice magis constrictum. Elytra angusta, hyalina, campo marginali coriaceo-prasino; campo discoidali ultra medium maculis 2 fuscis. Alæ ut in feminis; campo anteriore lateritio, dimidia parte basali campi postici vitrea, margine apicali vitreo, inquinato, apice imo fusco (vel hyalinæ, venis rufis, campo antico et ima basi postici rufis, fascia lata arcuata fusca, apicem hyalinam liberante, nonnunquam in maculas soluta, ad marginem costalem perducta; apice imo fusco).

Var. Elytra et alæ breviora.

♀. Long. 27; pronot. 7, femor. ant. 8, elytr. 15·5, latit. elytr. 5·5 millim.

♂. Long. 20; pronot. 5·5, femor. ant. 5·75, elytr. 19·5, latit. elytr. 4·25 millim.

Hab. Brazil, Rio Janeiro, Caravellas, Bahia (*Mus. Genavense*).]

[4. **Acontista paraensis,** sp. n.

♀. *A. concinnæ* simillima at minor; scutello faciali planulo, superne rotundato-producto; pronoto ut in *A. mexicana* postice constricto. Alæ fuscæ; campo anteriore lateritio, apice coarctato, margine apicali toto (etsi apice campi antici) latiuscule hyalino-limbato; vitta rufa campi antici ad apicem frequenter macula minore fusca.

Long. 20; pronot. 5·25, femor. ant. 5·5, elytr. 12·25, latit. elytr. 4·5 millim.

Hab. Brazil, Pará (*Mus. Genavense*).]

5. **Acontista mexicana,** sp. n.

Acontista cordilleræ, Sauss. Mém. Mex., Mantid. p. 34 (♀) (nec ♂); Miss. Scient. Mex., Orthopt. p. 239 (♀) (nec ♂).

♀. Prasina. Caput vertice crasso, obliquo, 4-sulcato. Scutellum faciale foveolatum; foveola media plana, circumcirca subcarinata, margine utrinque ad antennas compresso, subtuberculato, superne angulato vel obtuse truncato. Pronotum posterius constrictum. Alæ campo anteriore et fere dimidia parte basali campi posterioris lateritiis, de reliquo fuscis, apice et margine externo latiuscule hyalinis; campo anteriore ante partem hyalinam macula vel fascia fusca; (pars rufa ad basin dilatata; pars fusca fasciam latam ad marginem anticum alæ anguste perductam efficiens); campo anteriore apice valde coarctato, vena dividente sensim arcuata. Abdomen dilatatum. Pedes fusco-fasciati; tibiæ anticæ spinis 12 : 16.

Var. *a.* Elytra macula stigmatis minuta.—*b.* Alæ inter pagum rufum et pagum fuscum linea irregulari hyalina.—*c.* Fascia fusca in campo antico evanida.

Long. 22; pronot. 6·5, femor. ant. 6·75, elytr. 16·5, latit. elytr. 5·2 millim.

Hab. Mexico, Cordova (*Höge*), Atoyac in Vera Cruz (*Schumann*), Guerrero (*H. H. Smith*); Nicaragua, Chontales (*Janson*); Panama, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

In *A. mexicana* ♀, the red coloration of the hind wings is considerably extended on the posterior field, forming a red band, which is much dilated towards the base of the wing, while in *A. concinna* and other South-American species it only extends on to the base of the posterior field, forming a parallel band.

The males of *A. mexicana* are not certainly identified, but the following forms probably belong to it:—

♂. Mares sequentes ad *A. mexicanam* pertinere videntur: Var. *inquinata*. (Tab. VI. fig. 10.)
Scutellum faciale obsoletius tripartitum, frequenter planulum, superne obtusangulatum. Elytra lata, fusco-nebulosa, macula stigmatica fusca majuscula; campo anali et tertia parte campi discoidalis, macula media ad venam principalem vittaque transversa præapicali fuscis; campo marginali prasino-coriaceo. Alæ fusco-nebulosæ, dimidia parte basali magis infuscata, margine interiore subhyalino, apiceque anterius leviter infuscato; margine costali et ima basi sanguineis. ♂.
Var. Elytra angustiora.
Long. 21·5; pronot. 5·5, femor. ant. 5, elytr. 21·5, latit. elytr. 5 millim.

Hab. MEXICO, Cordova in Vera Cruz (*Höge*), Acapulco and Acaguizotla in Guerrero (*H. H. Smith*).

Var. *quadrimaculata*. (Tab. VI. fig. 8.)
A. mexicanæ var. *inquinatæ* simillima. Elytra et alæ hyalina, haud inquinata; elytra macula anali fusca, stigmate fusco minore, ad illum macula minuta nebulosa. Alæ fere ad basin campi postici fasciam latam irregularem transversam fuscam (a vena dividente ad angulum posticum percurrente), marginem internum liberante, instructæ. ♂.
Long. 20·5; pronot. 5·6, femor. ant. 5, elytr. 21·25, latit. elytr. 4·75 millim.

Hab. GUATEMALA, Lanquin in Vera Paz (*Champion*).

[6. **Acontista multicolor,** Sauss.

Acontista multicolor, Sauss. Bull. Soc. Ent. Suisse, iii. p. 229 (♀) (1870); Mém. Mex., Mantid. p. 37. 4; Westw. Revis. Mantid. p. 23.

♀. Minuta, prasina, crassiuscula; elytris abdominis longitudine, viridibus, fasciis 3 transversis arcuatis pallidis, apice pellucido, stigmate fusco; alis lateritiis, postice et apice fuscis albo-lineatis, margine externo albido-vitreo.
Long. 19·5; pronot. 5, elytr. 11·8, latit. elytr. 4, campi marginalis 1 millim.

Hab. ANTILLES, Guadeloupe (*Mus. Parisiense*).

A. multicolor is closely allied to, and possibly a small variety of, *A. mexicana*; but it has the facial shield more rounded superiorly, and the elytra wider, more like that of *A. concinna*.]

7. **Acontista fraterna,** sp. n.

♀. *A. mexicanæ* simillima at pronoto graciliore, insigniter gracili. Scutellum faciale tripartitum, margine superiore arcuato-angulato, angulo minus acuto. Elytra ut in specie laudata, pallide trifasciata, stigmate fusco. Alæ ut in *A. paraensi*, fuscæ, campo anteriore et ima basi campi posterioris lateritiis, margine apicali latiuscule hyalino, campo anteriore ante apicem macula fusca. Abdomen gracilius, fusiforme.
Long. 22; pronot. 6·25, femor. ant. 6·2, elytr. 14·5, latit. elytr. 4·25 millim.

Hab. COSTA RICA, Caché (*Rogers*).

A. vitrea may prove to be the male of this species.

[8. **Acontista cayennensis,** sp. n.

♀. Prasina, præcedentibus gracilior. Scutellum faciale ut in *A. concinna*, angustum, transversum, planum, indivisum, margine supero medio truncato. Elytra valde angusta, apice attenuata; parte apicali, et

suturali magna parte, hyalina; stigmate concolore; parte dimidia apicali maculis 2 pallide fuscis in regione hyalina et 2 rufis in margine partis prasinæ cum illis continuis; necnon parte prasina fascia et maculis 2 obsoletis pallidis. Alæ *angustæ* et fere ut in *A. concinna* ♂ pictæ, vitta anteriore lateritia, de reliquo subvitreæ, flavicantes; fascia arcuata fusca angusta, marginem posticum et externum totum liberante, in campo anteriore tantum maculam minutam formante, ornatæ. Campus anterior apice valde coarctatus, apice imo leviter fusco. Abdomen sat angustum pro femina, fusiforme.

Var. Alarum fascia arcuata fusca in maculas soluta, a macula campi antici sejuncta.

Long. circa 20; pronot. 4·4, femor. ant. 5·75, elytr. 14, latit. elytr. 4·5 millim.

Hab. GUIANA, Cayenne (*Mus. Genavense*).

This species is remarkable from the fact that it presents intermediate characters between the males and females of *A. concinna*. The elytra (♀) are narrower than usual in the females, but still broader than in the males. The wings (♀) are almost as narrow as in the males, and they have nearly the same coloration as in *A. concinna*, ♂. The abdomen (♀) is also narrower than in that species.]

[9. **Acontista amœnula,** Gerst.

Acontista amœnula, Gerst. Mittheil. d. naturw. Ver. Neu-Vorpommern, 1888, p. 93 (♀).

Acontista semirufa, Westw. Revis. Mantid. pp. 23, 45, t. 9. fig. 2 (♀) (nec ♂).

♀. Prasina, gracillima, maribus *A. concinnæ* haud crassior. Elytra apice et fere dimidia parte distali marginis suturalis vitreæ. Alæ angustæ; eorum campus anterior dimidiaque pars basalis campi posterioris lateritiis; campus posterior dehinc vitreus vel leviter flavicans; margo posterior et externus fusco-limbatus, vel nigricans, vitta nigra ad marginem anteriorem percurrente, apicem alæ liberante. Abdomen gracillimum, lineare, illo marium conforme.

Long. 28 millim.

Var. Vitta fusca alarum anterius dilatata, apicem campi antici tegens, macula vitrea apicis campi intermedii et antici vitrea (*semirufa*, Westw.).

Hab. AMAZONS (*Gerstäcker*), Ega (*Westwood*).

Westwood mistook the sex of his type, on account of the slender form of its abdomen, which resembles that of the males of the allied species. The green coriaceous elytra and the coloration of the wings prove that Westwood's insect is a female.]

10. **Acontista cordilleræ,** Sauss.

Acontista cordilleræ, Sauss. Bull. Soc. Ent. Suisse, iii. p. 62 (♂); Mém. Mex., Mantid. p. 34. 3 (♂) (nec ♀, comp. *A. mexicana*); Miss. Scient. Mex., Orthopt. p. 239, t. 5. fig. 17 (♂) (nec ♀); Westw. Revis. Mantid. p. 23.

♂. Minor, prasinus; elytris et alis vitreis, modice longis, campo marginali prasino-coriaceo, apicem liberante. Scutellum faciale indivisum, superne arcuato-truncatum vel obtusangulatum. Elytra stigmate minuto fusco. Alæ postice macula subtrigonali fusco-diaphana marginem posticum includente instructæ.

Var. *a.* Elytra lata, ut in *A. inquinata.*—*b.* Elytra angusta.

Anne var. *A. inquinatæ*?

Long. ?; pronot. 5, femor. ant. 4·5, elytr. 14·5, latit. elytr. 4 millim.

Hab. MEXICO, Cordova in the State of Vera Cruz (*Saussure*).

This insect is perhaps the male of *A. fraterna*?

11. **Acontista vitrea,** sp. n. (Tab. VI. fig. 9.)

♂. *A. cordillerœ* simillima; elytris et alis totis vitreis. Elytra campo marginali viridi-coriaceo, stigmate minimo (vel deficiente) fusco. Alæ margine costali partim prasino.

Var. In desiccatis costa alarum nonnunquam rufescens, sed alarum basis haud rubra.

Long. 21; pronot. 5·5, femor. ant. 5·5, elytr. 18·6, latit. elytr. 5 millim.

Hab. Mexico, Atoyac in Vera Cruz (*H. H. Smith*); Costa Rica (*Biolley, in Mus. Genavense*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

It is not unlikely that *A. vitrea* may prove to be a pallid male variety of *A. mexicana*.

[12. **Acontista bimaculata,** Sauss.

Acontista bimaculata, Sauss. Bull. Soc. Ent. Suisse, iii. p. 229 (♂) (1870); Mém. Mex., Mantid. p. 39. 6; Miss. Scient. Mex., Orthopt. p. 240; Westw. Revis. Mantid. p. 23.

♂. Viridis; prothorace brevi; scutellum faciale superne productum, rotundatum. Elytra et alæ longa, angusta, hyalina; elytra virescenti-venosa, campo marginali hyalino-virescente, stigmate nullo; alæ postice macula magna irregulari fusca, marginem posticum liberante. Tibiæ anticæ spinis minus numerosis, utrinque 11, externis parum contiguis.

♂. Long. 17·5; pronot. 4·3, femor. ant. 5, elytr. 19, latit. elytr. 4·8 millim.

Hab. Brazil, Rio Grande do Sul (*Dr. Ihering, in Mus. Genavense*).

A. bimaculata is the only species of the genus known to inhabit the southern parts of Tropical America. All the others are from Central America and the northern portion of South America. It should be remarked that *A. bimaculata* has special characters, the marginal field of the elytra being entirely hyaline, and the anterior tibiæ armed with fewer spines than usual, and more acute on the outer border.]

[13. **Acontista brevipennis,** Sauss.

Acontista brevipennis, Sauss. Mél. Orthopt. ii. 4ᵉ fasc. p. 21. 1, t. 9. fig. 20 (♀); Miss. Scient. Mex., Orthopt. p. 241; Westw. Revis. Mantid. p. 22.

Hab. Brazil.]

Obs.—Mantis minuta, Fabr. Ent. Syst. ii. p. 24. 50 (♂); Sauss. Mém. Mex., Mantid. p. 39. 7; is perhaps an *Acontista,* ♂, of South America.

Acontista major, Sauss. Miss. Scient. Mex., Orthopt. p. 241. 5, belongs now to the genus *Melliera.*

[TITHRONE, Stål.

Tithrone, Stål, Syst. Mant. pp. 42, 62 (1877).

We agree with Stål in separating *A. roseipennis,* Sauss., from *Acontista,* the armature of the anterior tibiæ being very different, *i. e.* normal as in most of the Mantinæ.

1. **Tithrone roseipennis,** Sauss.

Acontista roseipennis, Sauss. Bull. Soc. Ent. Suisse, iii. p. 229 (♀) (1870); Westw. Revis. Mantid. p. 23.

Tithrone roseipennis, Stål, Syst. Mant. p. 62.

Tibiæ anticæ spinis intus 14, extus 15.

Hab. Guiana, Cayenne (*Mus. Genavense*); Venezuela (*Stål*).]

STAGMOMANTIS, Sauss.

Stagmomantis, Saussure, Bull. Soc. Ent. Suisse, iii. p. 56 (1869); Mém. Mex., Mantid. p. 42; Miss. Scient. Mex., Orthopt. p. 242; Westwood, Revis. Mantid. p. 14.

Stagmatoptera, Burmeister (ex parte), Handb. ii. p. 537.

This genus is essentially a Central-American type. It is very numerous in species in the central parts of America and in the Antilles; and some of the Central-American representatives extend into the southern parts of the United States, or into the northern parts of South America.

Its species are somewhat heterogeneous, differing from each other in form and coloration; some are long and slender, others short and stout. The males, as usual, differ very much from the females and present different types; but they are not yet sufficiently well known to enable us to judge if they correspond to the differences of their respective females, so that at present we cannot divide the genus into typical sections.

The anterior legs are strong, not so long as in *Phasmomantis.* The femora have their exterior border occupied by spines for two-thirds of their length; the apical spines are small or wanting. The anterior tibiæ have their outer border unarmed for a short distance at the base; but in the larger species the unarmed space is greater.

In the American Mantidæ two types of coloration in the hind wings of the females are especially noticeable, particularly in the posterior field of these organs:—

1. Hyaline, tessellated with small opaque yellow bands placed on the transverse venulæ.

2. Iridescent-brown, with the transverse venulæ generally hyaline.

These two types are sometimes characteristic of large groups, *i. e.* in the tribe "Vatinæ." In the genus *Stagmomantis* both are to be found, most of the species belonging to the first type (*S. dimidiata, S. fraterna, S. domingensis*), some others with fuscous wings belonging to the second (*S. tolteca, S. cœrulans*); but it must be remarked that the varieties of several of the species include the two forms. For example, *S. tolteca,* with partly brown wings, has the transverse venulæ typically yellowish, but in certain specimens they become widely yellow and nearly tesselated as in the first type; and *S. domingensis,* the wings of which are usually clear and partly tesselated with yellow bands, is subject to lose the opaque yellow bands and to become pale fuscous with paler

spots. In some specimens a part only of the wings is infuscated. It seems probable that the coloration of the two types is sometimes reversed. Is not *S. cærulans* a mere variety of *S. carolina*, in which the fuscous colour has replaced the yellow bands?

Synopsis specierum.

I.

1. *Feminæ*:

a. Elytra et alæ rudimentaria. Elytra apice attenuata, rotundato-acuminata. Color prasina.

b. Corpus mediocre. Prothorax coxis anticis sesquilongior. Elytra primum abdominis segmentum haud superantia. Alæ antice flavæ, postice nigræ.

c. Caput paulo latius.—1. *nahua*, Sss.

cc. Caput angustius.—2. *vicina*, Sss.

bb. Gracillima. Prothorax coxis anticis duplo longior. Elytra secundum abdominis segmentum tegentia. Alæ flavæ.—3. *heterogamia*, sp. n.

aa. Elytra et alæ longiora, abdominis apicem tamen liberantia et ad apicem lata.

b. Elytra apice rotundata, stigmate corneo discoidali longitudinali vel ovato.

c. Elytra campo marginali angusto, quartam partem latitudinis elytri efficiens. Prothorax coxis anticis sesquilongior.

d. Alæ lineis vel fasciis flavis coriaceis tessellatæ. Prothoracis pars antica angustior, piriformis, utrinque subsinuata.

e. Elytra macula nigra nitida ad stigma posita; campus marginalis basi quam in medio latior, margine costali recto vel leviter sinuato. Prothorax plus quam $\frac{3}{4}$ longitudinis elytrorum æquans, parte antica piriformi, utrinque sinuata; subtus ad coxas niger. Coxæ intus ima basi et lobo apicali postico nigræ. Femora anteriora macula ad sulcum nigra notata. Alæ bicolores, apice macula fusca.

f. Griseæ; elytris fusco-marmoratis; pedibus fusco-fasciatis. Spinæ coxarum anticarum et illæ marginis interni femorum partim nigræ.

g. Elytra fusco-irrorata. Alarum campus anterior angustior; margo anterior campi posterioris citrinus; campus posterior pellucenti-fuscus, lineolis flavis transversis tessellatus.—4. *carolina*, L.

gg. Elytra maculis majoribus fusco-marmorata. Alarum campus anterior latior, totus ac campi postici dimidia pars antica, rubri; campus posterior de reliquo lineis flavis tessellatus.—5. *tolteca*, Sss.

ff. Tota prasina. Alæ campo anteriore et dimidia parte antica campi postici opaco-flavis, de reliquo hyalinæ, fasciis opacis flavis tessellatæ. Spinæ pedum anticorum tantum apice nigro, illæ coxarum prasinæ.—6. *dimidiata*, B.

ee. Elytra latiora, stigmate concolore; campus marginalis in medio quam basi latior, margine costali arcuato. Prothorax breviusculus, haud plus quam $\frac{2}{3}$ longitudinis elytrorum efficiens, parte antica subelliptica, utrinque haud sinuata. Coxæ et femora anteriora immaculata (spinæ femorum et tibiarum anticarum tantum apice nigro).

f. Prothorax sat longus, parte antica minus dilatata. Coxæ anteriores fere ad basin prothoracis attingentia.—7. *fraterna,* sp. n.

ff. Prothorax brevius, parte antica sensim dilatata. Coxæ anteriores prothoracem retro superantes.—8. *maya*, sp. n.

dd. Alæ fuscæ, campo postico toto membranaceo. Prothoracis pars antica paulo latior, marginibus colli rectis vel subarcuatis.—9. *cærulans,* sp. n.

cc. Elytra campo marginali latiore, tertiam partem latitudinis elytri efficiens; stigmate concolore vel albido, lineari. Alæ hyalinæ, fasciis flavis tessellatis.

d. Minores. Elytra parallela, saltem apice haud dilatata. Alæ campo anteriore et basi opaco-flavæ, de reliquo hyalinæ, flavo-fasciatæ.

e. Prothorax longior, gracilior, elytrorum longitudine, parte anteriore piriformi. Elytra angustiora, quam lata ter longiora, apice truncato-rotundata; campus marginalis venulis transversis numerosis obsitus.—10. *venusta,* sp. n.

ee. Prothorax quam elytra brevior, parte antica subelliptica. Elytra latiora, apice elliptico; campus marginalis minus latus, minus regulariter venulosus.—(7. *fraterna*; 8. *maya.*)

dd. Majores. Elytra apicem versus sub-dilatata, apice latissime rotundata. Prothorax modice longus, elytris brevior; ampliatione latiuscula, elliptica, fere dimidiam longitudinem pronoti efficiente. Campus marginalis elytrorum oblique venosus ac reticulatus. Alæ hyalinæ, apice late rotundatæ, fere totæ latiuscule flavo-fasciculatæ, tantum apice et margine anteriore flavo-coriaceis.—11. *limbata,* Hahn; 12. *montana,* sp. n.

bb. Elytra longiora, tantum apicem abdominis liberantia, apice anguste rotundata, campo marginali valde angusto, stigmate albido-calloso, trigonali, transverso, postice acuto. Prothorax coxis anticis plus quam sesquilongior; ejus pars antica piriformis, utrinque rotundato-angulata. Coxæ anteriores basi intus macula magna nigra vel rufa elliptica. Alæ hyalinæ, margine antico et apice flavo-coriaceis, basi tota membranacea, margine posteriore late vel dimidia parte postica fasciis flavis transversis tessellatis.—(Var. *a.* Elytris partim fuscis (in desiccatis).—*b.* Alis membranaceis absque fasciis flavis, totis infuscatis, pallide maculosis.)—[13. *domingensis,* Pal. Beauv.]

2. *Mares*:

a. Elytra abdomine breviora, tota membranacea.

b. Alæ infuscatæ.—1. *nahua.*

bb. Elytra et alæ vitrea.—1. *vicina.*

aa. Elytra abdominis longitudine vel illum superantia:

b. tota membranacea, venulis campi discoidalis magna parte sigmoidalibus, obliquis.

c. Elytra et alæ fusco-punctata vel tessellata. — 4. *carolina*; 5. *tolteca*; 6. *dimidiata.*

cc. Elytra et alæ tota hyalina, haud tessellata.—7. *fraterna*; 8. *maya.*

bb. campo marginali viridi-coriaceo vel subcoriaceo.

c. Elytra stigmate nullo vel obsoleto, lineari.

d. Campus marginalis elytri semi-coriaceus, thalassinus, basi modice dilatatus.

e. Venulæ campi discoidalis medii obliquæ, sigmoidales, invicem propinquæ.—10. *venusta.*

ee. Venulæ campi discoidalis subtransversæ, rarioribus sigmoidalibus. Campus marginalis partim coriaceus.—3. *heterogamia.*

dd. Campus marginalis saltem ante medium coriaceus.

e. Elytra angusta, campo marginali parum dilatato.—3. *heterogamia.*

ee. Elytra latiora, venulis parum obliquis; campo marginali basi dilatato.

f. Prothorax gracilis, parte anteriore subpiriformi. Elytra longiora, pronoto plus quam duplo longiora. Alæ hyalinæ.—11. *limbata*; 12. *montana.*

ff. Prothorax crassus, parte anteriore dilatata, elliptica. Elytra minus longa, quam pronotum duplo longiora, macula ad stigma fusca; campus discoidalis nebulosus. Alæ fusco-maculosæ.—14. *androgyna,* var.

cc. Elytra stigmate distincto.

d. Elytra valde angusta, venulis transversis magna parte rectis, apice subangulata vel rotundata, stigmate cum macula trigonali albida confuso; campus marginalis angustus, basi haud dilatatus. Alæ apice bilobatæ, campus axillaris campo anteriore subæquilongo; campus anterior angustus, vena ulnari indivisa. Pars anterior prothoracis valde piriformis.—[13. *domingensis.*]

dd. Elytra latiora, campo marginali basi dilatato; stigma macula fusca apposita. Prothorax crassus, parte anteriore ovata.—14. *androgyna*, sp. n.

II.

Feminæ:

a. Elytra prasina, stigmate concolore.—1. *nahua*; 2. *vicina*; 3. *heterogamia*; 7. *fraterna*; 8. *maya*; 10. *venusta*; 11. *limbata.*

aa. Elytra stigmate albo-calloso.—12. *montana*; [13. *domingensis*].

aaa. Elytra stigmate fusco.—4. *carolina*; 5. *tolteca*; 6. *dimidiata*; 9. *cærulans.*

1. **Stagmomantis nahua,** Sauss.

Stagmomantis nahua, Sauss. Mém. Mex., Mantid. p. 45. 1 (♀ ♂); Miss. Scient. Mex., Orthopt. p. 244. 1, figg. 14 (♀), 15 (♂); Stål, Syst. Mant. p. 61. 4; Westw. Revis. Mantid. p. 14.

Hab. Mexico, Eastern Cordillera, Orizaba (*Mus. Genavense*); Guatemala, San Gerónimo, Capetillo (*Champion*); Costa Rica (*Rogers*).

2. **Stagmomantis vicina,** Sauss.

Stagmomantis vicina, Sauss. Mém. Mex., Mantid. p. 46. 2 (♂ var.); Miss. Scient. Mex., Orthopt. p. 245. 2 (♀ ♂); Westw. Revis. Mantid. p. 14.

Hab. Guatemala (*Saussure*).

3. **Stagmomantis heterogamia,** sp. n. (Tab. VII. figg. 2, 3.)

♀. Gracillima, elongata. Caput magnum, latum, antice subexcavatum; vertex subarcuatus, quam oculi paulum altior, sulcis lateralibus retro percurrentibus valde incisis. Scutellum faciale angulo supero rotundato, *haud inciso.* Prothorax gracillimus, valde elongatus, marginibus fere totis graciliter denticulatis; ejus pars antica formæ consuetæ ut in *S. tolteca* et *S. nahua* ac valde gracilior. Elytra brevissima, ad apicem 2^i abdominis segmenti extensa, angusta, fere lanceolata, rotundato-acuminata, margine anteriore arcuato; campo marginali venuloso. campo postico illo plus quam sesquilatiore, macula nulla, stigmate

lineari, elongato, concolore; margine postico subrecto. Alæ semiorbiculares, campo antico basi opaco-flavo angusto, venis indivisis, apice maculis vitreis. Campus posticus magna parte vitreus, fasciis transversis opaco-flavis tessellatus. Pedes gracillimi. Coxæ anteriores margine antico remote denticulato, postico inermi; femora ultra emarginaturam macula minuta rufa. Abdomen fusiforme.

♂. Gracillimus. Pronoti margines inermes. Elytra angusta abdominis longitudine, apice attenuata, anguste rotundata; campo marginali basi modice dilatato, prasino-opaco, dehinc valde angustato, submembranaceo, thalassino; campo postico hyalino-fuscescente, basi linea infuscata ad venam principalem posita. Alæ hyalino-infuscatæ, apice fusciore, incisura apicali parum profunda. Campus posticus infuscatus, venis albidis, quam campus anticus paulo brevior. Pedes gracillimi; coxæ fere inermes, margine antico tantum denticulis paucis.

Var. ♂. Alæ vix infuscatæ.

♀. Long. 52; pronot. 19, femor. ant. 13, elytr. 15, latit. elytr. 5 millim.

♂. Long. 47; pronot. 18, femor. ant. 5, elytr. 31, latit. elytr. 6 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*: 2 ♂, 1 ♀).

Very like *S. nahua*, but much longer and more slender. In the female the head is wider, with the sulci of the vertex more impressed; the facial shield angulated above, not truncate; the elytra and wings longer, the latter not black in their posterior field. The male is distinguished from the corresponding sex of *S. nahua* by having the elytra produced nearly to the tip of the abdomen, with the costal margin not membranaceous.

4. **Stagmomantis carolina,** Joh.

Gryllus carolinus, Johans. Linn. Amœn. Acad. vi. p. 396. 28 (♀) (1763).

Mantis carolina, Linn. Syst. Nat. 12th edit. i. 2, p. 691. 9 (♀) (1767); Stoll, Kakkerl. t. 24. fig. 91 (♀); Burm. Handb. ii. p. 588. 38 (♀).

Stagmomantis carolina, Sauss. Mém. Mex., Mantid. p. 46; Stål, Syst. Mant. p. 61. 3; Westw. Revis. Mantid. p. 14 (excl. syn. *S. toltecæ*).

Gryllus irroratus, Johans. Linn. Amœn. Acad. vi. p. 397. 29 (♂).

Mantis irrorata, Linn. Syst. Nat. 12th edit. i. 2, p. 690. 7 (♀); Fabr. Ent. Syst. ii. p. 19. 29 (♀); Licht. Trans. Linn. Soc. vi. p. 27. 21 (♀) (1802).

Mantis conspurcata, Serv. Orthopt. p. 191. 19 (♂).

Mantis inquinata, Serv. loc. cit. p. 191. 20 (♂).

♀. Grisea; elytris ubique fusco-punctato marmoratis; alis campo anteriore flavido, apice macula fusca, campo postico hyalino-fusco, venulis transversis flavis; pedibus fusco-fasciatis.

♂. Illo *S. toltecæ* conformis.

♀. Long. 52; pronot. 18, femor. ant. 12·2, elytr. 21·25, latit. elytr. 7·5 millim.

♂. Long. 50; pronot. 16, femor. ant. 10, elytr. 33, latit. elytr. 7 millim.

Hab. NORTH AMERICA, Louisiana, Carolina, Tennessee, Texas.—NORTH MEXICO.

5. **Stagmomantis tolteca,** Sauss.

Mantis tolteca, Sauss. Rev. et Mag. de Zool. xiii. p. 127 (♀) (1861).

Stagmomantis tolteca, Sauss. Miss. Scient. Mex., Orthopt. p. 247, t. 5. fig. 6 (♀), t. 6. fig. 12 (♂).

♀. *S. carolinæ* simillima; elytris prasinis vel griseis, fusco-irroratis, macula disci fusca, fascia fusca irregulari ante medium, alteraque in apice, fuscis; alis anterius late rubris, macula apicali nigra, parte rubra intus latiore, dimidiam partem basalem campi postici tegente; campo postico de reliquo hyalino-griseo-flavicante, vittis transversis angustis flavis opacis; pedibus fusco-fasciatis.

♂. Gracillimus, griseus; elytris apicem abdominis attingentibus, subvitreis, totis pellucenti-fusco-irroratis; campo marginali vitreo, macula disci fusca; alis hyalino-fuscis, lineis hyalinis tessellatis, campo anteriore hyalino, apice fuscescente.

Var. Elytris et alis fere totis hyalinis.

♀. Long. 62; pronot. 24, femor. ant. 16, elytr. 27, latit. elytr. 9·5 millim.

♂. Long. 60; pronot. 19·5, femor. ant. 10·5, elytr. 40, latit. elytr. 8·5 millim.

Hab. NORTH AMERICA, Texas (*Boll, in Mus. Genavense*).—MEXICO, Presidio de Mazatlan (*Forrer*), Jalisco (*Schumann*), Orizaba (*Saussure*), Cordova (*Höge*), Guerrero, Teapa in Tabasco (*H. H. Smith*); GUATEMALA (*Saussure*), San Gerónimo (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA (*Biolley, in Mus. Genavense*); PANAMA, Caldera in Chiriqui, San Feliz (*Champion*).

Saussure first united this insect with *S. carolina*, but we believe it must be regarded as a distinct species, characterized by the broad cherry-red band which covers the anterior half of the wings, becoming wider at the base, while the second half of these organs is occupied by small opaque yellow fasciæ. The elytra are also differently coloured, the part situated between the discoidal macula and the apical black band being green or grey, somewhat marbled with black anteriorly. The males of the two species cannot be distinguished from each other; but in the genus *Stagmomantis* the males are very much alike in several species which are very distinct in the other sex.

6. **Stagmomantis dimidiata**, Burm.

Mantis carolina, Stoll, Kakkerl. t. 24. fig. 92 (♀).

Mantis dimidiata, Burm. Handb. ii. p. 539. 39 (♀).

Stagmomantis dimidiata, Sauss. Mém. Mex., Mantid. p. 48. 4 (♀); Miss. Scient. Mex., Orthopt. p. 248. 5, t. 5. fig. 6 (♀).

Mantis ferox, Sauss. Rev. et Mag. de Zool. xi. p. 60 (♀) (1859).

Mantis cuticularis, Serv. Orthopt. p. 189. 18 (♀ ♂).

Hab. NORTH AMERICA, Texas (*Mus. Genavense*).—MEXICO, Cordova (*Höge*), Orizaba (*Saussure*), Valladolid in Yucatan (*Gaumer*); GUATEMALA, Balheu and Cubulco in Vera Paz (*Champion*); COSTA RICA, San José (*Biolley, in Mus. Genavense*); PANAMA, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—ECUADOR, Quito (*Mus. Genavense*); ANTILLES, Cuba (*Saussure*).

7. **Stagmomantis fraterna**, sp. n. (Tab. IX. figg. 7, 8.)

♀. Oculi parum prominuli. Vertex leviter arcuatus, utrinque supra oculos haud prominulus. Pronotum breviusculum, ejus pars anterior fere dimidiam longitudinem efficiens, ovata, antice latius rotundata, utrinque recta, haud sinuata, angulis nullis. Pronoti margines tenuiter confertim denticulati. Coxæ anticæ cantho externo tenuissime denticulato. Elytra latiuscula, elliptica, apice latiuscule rotundata, stigmate lineari concolore; campo marginali quam in *S. tolteca* paulo latiore, irregulariter transverse venoso vel toto irregulariter reticulato; margine costali haud sinuato, recto, apice magis arcuato. Alæ flavæ; campo anteriore toto et posteriore tantum basi opacis; campo anteriore ultra medium maculis hyalinis notato, margine apicali prasino; campo posteriore vitreo, fasciis flavis transversis latiusculis tessellato. Abdomen fusiforme.

Var. Statura paulo minor (British Honduras).

♂. Gracilior, prasinus. Elytra et alæ modice longa, tota hyalina, venis prasinis; elytra sat lata, campo marginali basi sat dilatato, ante medium sinuato; alarum incisura anali distincta.

♀. Long. 41; pronot. 13, ejus ampliat. 3·75, femor. ant. 10·5, elytr. 19·5, latit. elytr. 7·8 millim.

♂. Long. 39; pronot. 11·5, femor. ant. 8·5, elytr. 30, latit. elytr. 7·25 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*: ♂); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA (*coll. Dohrn; Mus. Genavense*), Tamahu in Vera Paz (*Champion*).

8. **Stagmomantis maya,** sp. n. (Tab. IX. figg. 5, 6.)

S. fraternæ simillima. Prothorax brevius; ejus pars postica quam pars antica haud longior; pars antica ♀ ♂ magis elliptica.

♀. Elytra et alæ paulo breviora; alæ omnino hyalinæ, dense flavo-fasciatæ, etsi in basi campi anterioris, tantum margine antico et apicali flavo-opaco.

Var. Statura minore; pronoti parte antica minus elliptica (Yucatan).

♀. Long. 35; pronot. 11·5, ejus ampliat. 4·2, femor. ant. 9, elytr. 15, latit. elytr. 6·4 millim.

♂? (*in coll. Dohrn*).

Hab. MEXICO, Temax in North Yucatan (*Gaumer*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA (*coll. Dohrn*: ♂).

9. **Stagmomantis cœrulans,** sp. n. (Tab. IX. fig. 9.)

♀. Prasina vel fusca. Caput trigonale, antice minus excavata quam in *S. tolteca*. Pronoti ampliatio crassior, magis ovata, marginibus lateralibus haud sinuatis, ante angulos fere rectis; pars postica subtiliter sat dense denticulata. Elytra et alæ illis *S. toltecæ* conformia, at tota infuscata. Elytra stigmate calloso fusco; campo marginali venulis transversis irregularibus obsito, ut in *S. fraterna*. Alæ fuscæ, pellucentes, violascentes, vittis opacis nullis; campo anteriore quam in *S. tolteca* angustiore, fusco. Pedes crassiusculi, quam in *S. tolteca* crassiores.

♀. Long. 58; pronot. 23, femor. ant. 16·5, elytr. 25, latit. elytr. 8 millim.

Hab. CENTRAL AMERICA? (*Mus. Genavense*).

10. **Stagmomantis venusta,** sp. n. (Tab. VII. figg. 4, 5.)

♀. Prasina, *S. dimidiatæ* simillima. Pronotum gracile, elongatum, remote denticulatum ut in specie laudata. Femora anteriora immaculata. Elytra elliptica, apicem versus leviter dilatata, apice minus rotundato, subangulato. Campus marginalis paulo latior, venulis transversis subobliquis numerosis obsitus, his irregulariter reticulatis; margo anterior apice valde, posterior apice minus, arcuatus; apex elytri propter hoc leviter retro rejectus. Venulæ transversæ campi discoidalis fere longitudinales, in venis longitudinalibus haud perpendiculares. Elytra ante medium stigmate longitudinali lineari, calloso, elytri colore et ante illum macula obsoleta subhyalina. Alæ elytris valde breviores, campo antico et basi postici flavo-opacis; campo postico de reliquo hyalino, anguste flavo-fasciato; campi antici margine apicali minute prasino.

Var. *a*. Alarum campi postici fasciæ flavæ lineares.—*b*. Elytra angustiora apice regulariter rotundata (long. 16·5, latit. 5·5 millim.).

♂. Gracillimus. Pronotum haud denticulatum. Elytra hyalina, apicem versus attenuata, campo marginali thalassino, venulis transversis parallelis obsito; stigmate thalassino, obsoleto; venis campi discoidalis magna parte sigmoidalibus, obliquis, in areis ulnaribus tamen subrectis. Alæ hyalinæ, margine anteriore thalassino, apice breviter infuscatæ; limbo postico in areolis griseo-maculatis; venæ campi antici omnes indivisæ.

♀. Long. 43; pronot. 16, femor. ant. 11, elytr. 17, latit. elytr. 6·5 millim.

♂. Long. circa 45 (abdomen broken off); pronot. 14·25, femor. ant. 8, elytr. 28, latit. elytr. 5·5 millim.

Hab. GUATEMALA, Sinanja, Panima, and Teleman (♂), all in Vera Paz (*Champion*).

11. **Stagmomantis limbata,** Hahn.

Mantis limbata, Hahn, Icones ad Mon. Cimic. i. t. A. f. 2 (♂) (1835); de Haan, Bijdr. Kenn. Orthopt. p. 82. 57 (♂).

Stagmomantis limbata, Sauss. Miss. Scient. Mex., Orthopt. p. 249, t. 6. fig. 11 (♀).

Mantis latipennis, Burm. Handb. ii. p. 538. 37 (♀) (1839).

Stagmomantis latipennis, Sauss. Mém. Mex., Mantid. p. 52. 6 (♀ ♂); Westw. Revis. Mantid. p. 14, t. 9. figg. 4 (♂), 5 (♀).

Mantis viridimargo, Burm. Handb. ii. p. 532. 13 (♂); de Haan, Bijdr. Kenn. Orthopt. p. 82. 58 (♂).

Mantis cellularis, Burm. Handb. ii. p. 532. 12 (♂).

Hab. MEXICO, Chihuahua (*Kerr*), Presidio de Mazatlan (*Forrer*), Amula and Chilpancingo in Guerrero, Cuernavaca in Morelos (*H. H. Smith*), Jalisco (*Schumann*), Tampico and Oaxaca (*Saussure*).

12. **Stagmomantis montana,** sp. n. (Tab. IX. fig. 4.)

♀. Valida, tota prasina; pronoti ampliatione elliptica, marginibus lateralibus minus arcuatis. *S. limbatæ* simillima, at major; differt tamen scutello faciali elevatiore, quam altiore vix duplo latiore; alis fere omnino fasciis flavis tessellatis, tantum usque ad venam mediam coriaceis.

♂. Prasina. Caput minutum, late trigonale ut in *S. dimidiata.* Vertex transversus, quam oculi haud altior. Scutellum faciale superne subsinuatum. Pronoti ampliatio paulo magis ovata quam in *S. dimidiata* ♂, minus quam in *S. dimidiata* ♀. Elytra vitrea, stigmate nullo, campo marginali viridi valde opaco, basi latiusculo, margine costali valde arcuato, dehinc sinuato, ultra medium fere nullum. Alæ vitreæ, margine antico et apice virescentibus; vena ulnari ultra medium furcata, area ulnari oblique venulosa.

♀. Long. 75; pronot. 28·5, femor. ant. 20·5, elytr. 34, latit. elytr. 14·25 millim.

♂. Long. 58; pronot. 21·5, femor. ant. 14, elytr. 51, latit. elytr. 11 millim.

Hab. MEXICO, Acapulco, Tepetlapa, and Chilpancingo in Guerrero (*H. H. Smith*), Cordova (*Höge*); GUATEMALA, Volcan de Atitlan, 2500 to 3500 feet (*Champion*).

This species is very similar to *S. limbata*, but the female has its facial shield more elevated, being half as high as broad, while in *S. limbata* it is three times broader than high. In the male the costal margin of the elytra is distinctly wider at the base, and in consequence more sinuated than in *S. limbata*.

[13. **Stagmomantis domingensis,** Pal. de Beauv.

Mantis domingensis, Pal. de Beauv. Ins. d'Afr. et d'Amér. p. 61, t. 12. fig. 2 (♀) (1835); Guérin, in Ramon de la Sagra's Hist. nat. de Cuba, Ins. p. 145 (♀).

Stagmomantis domingensis, Sauss. Bull. Soc. Ent. Suisse, iii. p. 65; Mém. Mex., Mantid. p. 50. 5 (♀ ♂); Miss. Scient. Mex., Orthopt. p. 245. 3; Westw. Revis. Mantid. p. 14, t. 4. fig. 3 (♀), t. 12. fig. 5 (nec fig. 3) (♂).

Mantis albimacula, Burm. Handb. ii. p. 534. 19 (Brasilia).

Mantis cubaensis, de Haan, Bijdr. Kenn. Orthopt. p. 74. 27 (♀).

Hab. ANTILLES, Cuba, San Domingo; BRAZIL.]

14. **Stagmomantis androgyna,** sp. n. (Tab. VII. fig. 1.)

♂. Crassiuscula, prasina. Caput crassum, oculis minus globosis, ut in feminis *S. dimidiatæ* et *toltecæ*. Prothorax crassus ut in feminis laudatis; ampliatione tamen latiore, magis ovata, marginibus lateralibus haud sinuatis, angulis itaque minus expressis. Elytra latiora, quam in maribus specierum laudatarum, minus longa, subvitrea, venis prasinis vel brunneis, frequenter ad costam et apice brunnescentibus, macula fusca ad tertiam partem instructa. Campus marginalis viridi-opacus, basi dilatatus, ultra medium fere nullus, ad venam principalem linea albida. Alæ subvitreæ, margine antico et apice virescentibus; vena ulnari bis furcata. Campus posterior in areolis fusco-maculatus vel fusco-tessellatus, basi vitreus. Pedes crassiusculi; antici crassissimi, quam in feminis laudatis haud graciliores, quoque crassiores. Abdomen latiusculum.

Long. 66; pronot. 23·5, femor. ant. 16, elytr. 48, latit. elytr. 11 millim.

Hab. British Honduras, Belize (*Blancaneaux*).

This insect does not fit well into the genus *Stagmomantis*, on account of its robust build—too short and thick for a male of this genus. The head, pronotum, and feet are formed very much as in the females, and the abdomen also is distinctly more dilated than in the males of *Stagmomantis*. The male described forms a passage to the corresponding sex of *Stagmatoptera*, which it exactly resembles. It belongs, however, to the genus *Stagmomantis*, its facial shield being transverse, twice as broad as high (although much higher than in the true *Stagmomantis*), the macula of the elytra unicolorous (bicolorous in *Stagmatoptera*), and the anterior femora without marking. The elytra are shorter and wider than in the true *Stagmomantis*.

S. androgyna may, perhaps, belong to the group of *S. limbata*. The black stigma of its elytra resembles that of *S. dimidiata*, but it is larger than in that species, from which it also differs in the elliptic form of the anterior part of the pronotum. This last-mentioned character should approximate it to *S. cærulans*, ♀, but the size is too large for that species. As regards size, *S. androgyna* would agree better with *S. montana*, ♀; but it does not correspond with that species either, on account of the black stigma of the elytra.

MELLIERA *, Sauss.

Melliera, Saussure, Societas Entomologica, 1892, p. 123.

Caput mediocre; vertex inter oculos transversus, per sulcum utrinque valde incisus. Oculi antrorsum tumidi, facie itaque concava; scutellum faciale transversum, margine superiore arcuato, vel ♂ utrinque subsinuatum. Prothorax mediocris, modice gracilis, carinatus, antice valde sulcatus. Ejus collum quam prothorax medius potius latius, antice haud attenuatum, late rotundatum, convexum, anterius tumidum; supra, aream ovatam convexam per sulcum distinctum delineatam, obferens. Ampliatio coxalis parum lata, angulis rotundatis, ♀ valde bituberculata. Margines laterales prothoracis ♀ remote denticulati, dentibus ♂ vix distinctis. Prosternum ante coxas utrinque dente armato (ut in genere *Sphodropoda*, St.). Pedes antici mediocres. Coxæ anticæ margine antico remote dentato, externo ♀ crenato, ♂ inermi; postico inermi. Femora spina apicali utrinque instructa. Trochanteres et femora basi intus nigra. Tibiæ et ad basin spinosæ. Pedes intermedii et postici brevissimi; coxis sat elongatis; femoribus crassiusculis, subtus planis, extus carinatis apice spinula geniculari armatis. Tarsi breves, metatarso brevi.

* μελλιέρη, a novice, preparing to become a priestess.

Abdomen ♀ fusiforme, ♂ gracile; lamina supra-analis transversa. Cerci bene articulati, longiusculi. Lamina infra-genitalis ♂ stylis styliformibus instructa.

♀. Elytra abbreviata, abdomen dimidium tegentia, coriacea, campo marginali angusto, ultra medium attenuato, apice oblique rotundato-truncato; stigmate corneo nigro, disco basi et ultra medium fusco-punctato vel maculoso, pone stigma albescente. Alæ pellucenti-fuscæ, cæruleo- vel æneo- splendide nitentes, amplæ, latiores quam longæ, elytris sensim breviores; campus anterior apice angulatus, margine apicali transverso, subsinuato; sinus analis nullus; campus posterior postice valde arcuatus, venulis transversis subhyalinis; campus anterior ante apicem maculis nonnullis fuscis, ubique inter venas quadrato-reticulatus, areolis magna parte latioribus quam altioribus.

♂. Elytra haud abbreviata, latiuscula, vitrea, parallela, apice ad partem anteriorem rotundato; venis ad basin campi marginalis dense reticulatis; discus ante medium macula obliqua brunnea, obsoletissima haud opaca. Campi discoidalis venulæ transversæ, ab antero-externo ad postero-internum leviter obliquæ. Alæ vitreæ, quadrato-reticulatæ, venulis perpendicularibus etsi in basi campi antici. Sinus analis distinctus. Vena ulnaris furcata. Areæ campi postici per venam spuriam distincte divisæ.

The true position of this genus is somewhat uncertain. It does not fit well into the tribe Mantinæ in consequence of its tuberculated pronotum and its very short legs, but it can scarcely be placed in a different tribe.

It bears a false resemblance to *Popa*, Stål, on account of its short legs; but, except for the two tubercles on the pronotum, it has no affinity with the Harpaginæ. On the contrary, the form of the body and of the elytra, and the habitus of the female, are quite those of *Stagmomantis*.

Melliera bears some relationship to the Cuban genus *Gonatista*, Sauss., as it has the collar of the pronotum not contracted and rounded anteriorly, and the intermediate and hind femora incrassated at the base. In *Gonatista* the anterior part of the pronotum is slightly papillate (though not tuberculate), and the elytra, ♀ and ♂, also somewhat resemble those of *Melliera*; but the legs are longer, and the armature of the first pair is very different. Moreover, *Gonatista* belongs to the section of Mantinæ with elongate supra-anal plates.

We are of opinion, therefore, that *Melliera* should be placed next to the genus *Stagmomantis*, although rather aberrant in this group of Mantinæ.

1. **Melliera atopogamia,** Sauss. (Tab. VII. figg. 7, 8.)

Melliera atopogamia, Sauss. Societas Entomologica, 1892, p. 123.

♀. Fulvo-grisea, fusco-marmorata. Scutellum faciale quam altum ter latius, margine superiore arcuato. Prothoracis collum supra obsolete quadri-mamillatum; dorsum ad ampliationem tuberculis magnis elevatis 2 instructum; margines remote obtuse denticulati. Elytra ad medium abdomen extensa, fusco-irrorata; margine antico arcuato; stigmate corneo nigro ovato ad medium venæ discoidalis posito, postice cum macula alba confuso.—Pedes fusco-fasciati. Antici intus testacei, trochanteribus femorumque basi nigris; spinis apice nigris; illis marginis interni alternatim nigris; tibiis margine superiore arcuato; subtus spinis: intus 13, extus 10.—Lamina supra-analis rotundata, subincisa.

♂. Scutellum faciale superne nonnunquam subbisinuatum. Prothoracis collum vix, vel haud mamillatum; ejus ampliatio haud tuberculata, tantum utrinque leviter subtumida.—Elytra et alæ vitrea; venis omnibus fusco-ferrugineis.—Elytra abdomen paulum superantia; venulis campi discoidalis saltem in medio fractis, sigmoidalibus. Alarum vena ulnaris frequenter bisfurcata. Lamina supra-analis transverse rotundato-trigonalis.

♀. Long. 49; pronot. 15, femor. ant. 11·5, elytr. 18·5, latit. elytr. 8 millim.

♂. Long. 44; pronot. 12·5, femor. ant. 9, elytr. 30·5, latit. elytr. 7·25 millim.

Hab. Mexico, Sinaloa (*Forrer*: ♀); Guatemala, San Isidro (*Champion*: ♂); Nicaragua, Chontales (*Janson*: ♂).

[2. **Melliera major,** Sauss.

Acontista major, Sauss. Mélang. Orthopt. ii. 4e fasc. p. 22. 2 (♂); Miss. Scient. Mex., Orthopt. p. 241; Westw. Revis. Mantid. p. 22.

Hab. South America, Brazil.]

PHASMOMANTIS, Sauss.

Phasmomantis, Saussure, Mélang. Orthopt. i. 3e fasc. (ex parte) p. 190 (1870) et Suppl. p. 402 (1871); Mém. Mex., Mantid. p. 54; Miss. Scient. Mex., Orthopt. p. 251; Stål, Syst. Mant. p. 39; Westw. Revis. Mantid. p. 10.

In this genus the anterior femora are elongate, the spines occupying scarcely two-thirds of their length. The anterior tibiæ are spinose on the outer border nearly to their base.

Synopsis specierum.

a. ♀. Prasina. Pronotum tenuiter denticulatum, ampliatione coxali tenuissima. Elytra elliptica, stigmate lineari concolore; subtus nigro-lineata; area anali nigro-cærulea. Alæ campo postico macula maxima nigro-cærulea.—1. *sumichrasti,* Sss.

aa. ♀. Prasina vel grisea, fusco-fasciata. Pronotum fortius denticulatum, ampliatione coxali lata. Elytra apice attenuata, stigmate nigro; area anali et alis nigro-violascentibus.—2. *championi,* sp. n.

1. **Phasmomantis sumichrasti,** Sauss.

Mantis sumichrasti, Sauss. Rev. et Mag. de Zool. xiii. p. 126 (♀) (1861).

Phasmomantis sumichrasti, Sauss. Miss. Scient. Mex., Orthopt. p. 252, t. 5. figg. 7 (♀), 8 (♂); Mém. Mex., Mantid. p. 55 (♀ ♂); Westw. Revis. Mantid. p. 10.

Mantis mexicana, Sauss. Rev. et Mag. de Zool. xiii. p. 127 (♂).

Tibiæ anticæ spinis intus 13–14, extus 9–11, margine externo et ad basin spinoso.

♂. In individuis bene servatis elytra sunt membranacea, venulatione densissima, brunneo-ferrugineo-infuscata, macula areæ analis fusco-violacea; campo marginali opaco-prasino, vitta albida ad venam principalem; alæque angustæ, pellucenti-infuscatæ, venulis hyalinis, basi rufa, macula grandi disci fusco-violacea.

♀. Long 90; pronot. 36·5, femor. ant. 23, elytr. 22, latit. elytr. 9·25 millim.

♂. Long. 81; pronot. 26, femor. ant. 15·5, elytr. 41, latit. elytr. 6·5 millim.

Hab. North America, Texas (*Mus. Genavense*).—Mexico, Jalisco (*F. D. G.*), Cordova and Tehuantepec (*Mus. Genavense; Sumichrast*), Valladolid and Temax in Yucatan (*Gaumer*); British Honduras (*Blancaneaux*).

2. **Phasmomantis championi,** sp. n. (Tab. VII. fig. 6.)

♀. Grandis, fulvo-brunnea (vel prasina?). Scutellum faciale quam altum haud ter latius, margine supero arcuato. Vertex inter sulcos transversus. Prothorax longissimus, crassus, valde carinatus, marginibus totis valde denticulatis; dentibus majoribus trigonalibus, alterisque intercalatis dense obsitis; dentibus colli majoribus. Ampliatio coxalis lata, utrinque rotundata. Colli margines recti. Elytra prasina vel

grisea, ad apicem secundi abdominis segmenti extensa, apice valde attenuata, rotundata, acuminata, margine costali ante medium valde arcuato. Campus marginalis ante medium latiusculus, dehinc attenuatus. Campus discoidalis ultra medium stigmate corneo nigro ovato instructo. Area analis nigra. Alæ nigræ, subviolascentes; campo posteriore venulis transversis albidis, vitreis, notato. Pedes antici fusco-fasciati. Coxæ anticæ in marginibus serratæ, margine anteriore toto denticulato spinisque nigris 3–4, invicem remotis armato; apice lamellari, sublobato, crenato. Tibiæ anticæ 15 : 9 spinatæ. Abdomen depressum, latiusculum; lamina supra-analis in medio rotundata utrinque subsinuata.

♀. Long. 102; pronot. 46, femor. ant. 23, elytr. 26, latit. elytr. 11 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

MACROMANTIS, Sauss.

Macromantis, Saussure, Mém. Mex., Mantid. p. 77 (1871); Miss. Scient. Mex., Orthopt. p. 270.

Insecta maxima, valida, prasina. Femora antica extus spinis 7. Tibiæ anticæ spinis numerosis (circ. 15 : 20) armatæ. Lamina supra-analis anguste elongata. Vertex sat compressus. Margines pronoti integri, excepto in ejus ampliatione.— ♀ ♀. Elytra cordiformia, coriacea, acuminata; campo marginali plus quam dimidiam latitudinem elytri efficiente; vena principali in apice elytri desinente. Alarum vena ulnaris biramosa.— ♂ ♂. Elytra et alæ longissima, vitrea. Cerci longissimi, articulis basalibus 8–10 brevissimis.

This genus comprises the largest representatives of the family Mantidæ. The males and females are very different in the structure of their wings; but they are easy to unite by the form of the pronotum and cerci. The species are very rare in collections; we know of only one.

The genera *Macromantis*, *Metriomantis*, and *Hicetia* form together a very natural group, bearing much resemblance to *Cardioptera*; but that genus forms a parallel group belonging to the tribe Vatinæ.

Synopsis specierum secundum mares ordinata.

a. Elytrorum ♂ campus marginalis virescens, semicoriaceus.—1. *ovalifolia,* Stoll.

aa. Elytra ♂ vitrea, vitta flavido- vel viridi-opaca in vena principali.—2. *hyalina,* De G.

1. **Macromantis ovalifolia,** Stoll.

Mantis ovalifolia, Stoll, Kakkerl. t. 19. fig. 72 (nec fig. 80); Burm. Handb. ii. p. 541. 49 (♀).

Cardioptera ovalifolia, Sauss. Bull. Soc. Ent. Suisse, iii. p. 231 (♀ ♂) (1870).

Macromantis ovalifolia, Sauss. Mém. Mex., Mant. p. 78. 1, t. 1. fig. 4 (♀ ♂); Westw. Revis. Mantid. p. 14.

♂. Cerci longi, supra nigri, basi excepta compressiusculi; articulis elongatis; ultimo articulo longo, acutissimo.

Hab. GUIANA.

Var. **nicaraguæ.**

♂. Totus prasinus; elytris et alis vitreis. Elytrorum campus marginalis pallide prasinus, plus minus subcoriaceus, excepto basi ad venam humeralem. Area humerali-discoidalis subhyalina; fascia angusta disci ad venam discoidalem prasino-coriacea, basi incrassata. Cerci minus longi, teretes, articulis minus longis; articulo ultimo mediocri, hebetato.

Long. 96; pronot. 32, femor. ant. 22·5, cerci 15–16, elytr. 78·5, latit. elytr. 21 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Only one (male) specimen existing in the collection, we are unable to state for certain whether the Central-American insect really belongs to *M. ovalifolia*, Stoll. The Nicaraguan male differs as follows from males of the typical species from Guiana:—The marginal field of the elytra is green up to its base, with a small irregular hyaline space along the principal vein at the base; the wings are somewhat more densely reticulated, and their costal border is green only at its extremity. The cerci are distinctly different, as described, but perhaps only on account of individual variation.

[2. **Macromantis hyalina,** De Geer.

Mantis hyalina, De Geer, Mém. des Ins. iii. p. 410. 4, t. 37. fig. 1 (♂) (1778); Stoll, Kakkerl. t. 20. fig. 75 (♂) (1787).

Macromantis hyalina, Sauss. Mém. Mex., Mantid. p. 79. 2 (♂); Miss. Scient. Mex., Orthopt. p. 270. 1 (♂); Westw. Revis. Mantid. p. 15.

Hab. Tropical America; Guiana, Surinam.]

[METRIOMANTIS *, gen. nov.

Cardioptera (ex parte), Saussure, Mém. Mex. Mantid. p. 68.

Insecta staturæ mediocri, generi *Macromantidi* haud dissimilia. Pedes antici et caput illis illius generis similia. Pronotum modice longum, anterius parum ampliatum, marginibus dimidiæ partis basalis denticulatis. Elytra cordiformia (vel late truncata); vena principalis ante eorum apicem desinens; apex elytri hoc propter per campum discoidalem formatus. Lamina supra-analis trigonalis; cerci teretes, mediocri.

In the new classification the true *Cardiopteræ*, having carinated tibiæ, are removed to the tribe Vatinæ. The following species with uncarinated tibiæ therefore require a new generic name, for which we propose *Metriomantis*. The limit of their distribution in Tropical America is uncertain, and, like *Macromantis* and *Stagmatoptera*, they are likely to extend into Central America.

Metriomantis should be placed immediately after *Macromantis*, and it is, so to speak, a diminutive form of that genus. The form is similar; the head is also large and triangular, flattened in front, with the eyes somewhat tumid laterally beneath. The pronotum, however, is much shorter, and but very slightly widened anteriorly; the wings have transverse yellow bands, very much as in *Stagmomantis* (but narrower); and the anterior femora have at their outer border six or seven spines. The supra-anal plate is not strongly produced, but wide and triangular.

The males are as yet unknown; but it may be assumed, from analogy, that they have hyaline elytra.

It is possible that the males of some species at present referred to the genus *Photina*, Burm., may prove to belong to *Metriomantis*.

Some small larvæ before us from Central America seem to belong to this genus, perhaps to one of the species here enumerated.

* *μέτριος*, moderate; Mantis,—*Mantis* of moderate size.

Synopsis specierum.

a. Elytra ♀ apice late arcuato-truncata.—1. *cupido,* Sss.

aa. Elytra ♀ cordiformia apice subacuminata.

b. Pronoti ampliatio parallela.—2. *biramosa,* sp. n.

bb. Pronoti ampliatio ovata.—3. *ovata,* sp. n

1. **Metriomantis cupido,** Sauss.

Cardioptera cupido, Sauss. Bull. Soc. Ent. Suisse, iii. pp. 66 (♀), 231 (♀ ♂) (1869); Mém. Mex., Mantid. p. 71; Miss. Scient. Mex., Orthopt. p. 267, t. 6. figg. 9, 9*a* (♀); Westw. Revis. Mantid. p. 15.

♀. Scutellum faciale superne obtusangulatum. Pronoti ampliatio parallela, margine anteriore transverse arcuato. Elytra breviuscula, apice late arcuato-truncata; campo marginali apice rotundato, quam campus discoidalis paulo breviore; campo analis coriaceo. Femora anteriora extus spinis 7.

♀. Long. 30; pronot. 10, femor. ant. 9·5, elytr. 12, latit. elytr. 12, campi marg. 3 millim.

Hab. Brazil? (*Mus. Genavense, ex coll. Jurine*).

2. **Metriomantis biramosa,** sp. n.

♀. Scutellum faciale margine supero toto transverse subarcuato. Pronoti ampliatio parallela, margine antico arcuato. Elytra plus minus cordiformia, apice obtuse acuminata; campo discoidali basi et campo anali, inter venas, membranaceis, subhyalinis. Alæ omnino in venulis flavo-fasciculatis; vena ulnari biramosa. Femora anteriora extus spinis 6.

Long. circa 37; pronot. 14·75, femor. ant. 11·25, elytr. 17·5, latit. elytr. 8·5, campi marg. 3 millim.

Hab. Brazil (*Mus. Genavense*).

3. **Metriomantis ovata,** sp. n.

♀. Scutellum faciale superne in medio leviter angulatum. Pronoti ampliatio ovata, subelliptica. Elytra sensim ut in *M. biramosa*; campo discoidali tamen fere toto in areolis membranaceo. Alæ vitreæ, fasciculis flavis venularum angustis, partim obliteratis; vena ulnari in medio furcata. Femora anteriora extus spinis 7.

Long. 39; pronot. 8·2, femor. ant. 11·5, elytr. 21, latit. elytr. 11·5, campi marg. 4·25 millim.

Hab. Guiana, Cayenne (*Prudhomme; Mus. Genavense*).]

Photina vitrea, Burm., Sauss., resembles this species, but it has the anterior femora maculated with black at the base of their inner spines.

[HICETIA *, gen. nov.

Corpus gracile, angustum. Caput compressum, mediocre, scutello faciali humili, valde transverso. Oculi compressi, rotundati. Ocelli minuti, invicem remoti.—Prothorax elongatus, gracillimus, parallelus, marginibus in dimidia parte antica subtiliter denticulatis; ampliatio angusta, parallela, margine antico transverse arcuato, marginibus lateralibus anguste deplicatis.—Elytra et alæ ♀ abdomine breviora, apice attenuata; elytra campo marginali angusto; alarum vena ulnari ramosa.—Pedes antici gracillimi, extus spinis 6–7; tibiæ rectæ, spinis numerosissimis.—Abdomen angustum, fusiforme; lamina supra-analis grandis, elongata. Cerci longissimi, lamellari-compressi, angusti, acuminati.—Mares ignoti (alis vitreis, completis?).

This genus approaches *Macromantis* and *Metriomantis.* It completes in a very

* ἱκέτις, female suppliant.

interesting way the group composed of these genera, in furnishing the slender form of the type.

1. **Hicetia goeldiana,** sp. n.

♀. Gracilis, prasina. Caput latius quam altum, vertice quam oculi paulum altiore, subarcuato, subtiliter 4-sulcato. Scutellum faciale quinquies latius quam altum, planum, margine supero subbisinuato. Ocelli minuti, per carinulam arcuatam conjuncti. Frons supra illos carinula transversa (vel sulco) subangulata notata. Pronoti ampliatio tertiam partem prothoracis æquans, parallela, supra coxas vix dilatatiuscula. Elytra ad 5^{m} abd. segmentum extensa, basi et apice coarctata, apice anguste rotundato, haud retro vergente, margine antico arcuato; campo marginali tertiam vel quartam partem latitudinis elytri efficiente; campo discoidali semi-membranaceo, basi et campo anali vitreis. Alæ valde breviores, angustæ, subhyalinæ, venis et margine antico virescentibus; campo anteriore angustissimo, posteriorem superante, apice rotundato; vena ulnari biramosa. Coxæ anticæ subtus ad marginem posticum subgranulosæ. Femorum spinæ externæ subperpendiculares; prima longa; spinæ discoidales primæ 3 subperpendiculares. Tibiæ spinis utrinque 15–17. (Lamina supra-analis incompleta.) Cerci subangusti, longe acuminati, abdomen longissime superantes.

Long. 44; pronot. 15, elytr. 18, femor. ant. 12 millim.

Hab. BRAZIL, Rio Janeiro (*Göldi*).]

YERSINIA, Sauss.

Yersinia, Saussure, Bull. Soc. Ent. Suisse, iii. p. 72 (1869); Stål, Syst. Mantod. p. 27; Brunner de W. Révis. Syst. Orthopt. p. 61.

Caput compressum, trigonali-lenticulare. Ocelli superi inter se quam ab ocello antico minus remoti. Oculi parum prominuli, superne acuti (tuberculati). Pronotum breve, rhomboidale; ejus pars postica quam pars antica paulo longior, vix carinulata; ejus margines ♀ denticulati. Elytra et alæ ♀ ♂ rudimentaria. Pedes antici robusti; femora spinis discoidalibus 4, spinis apicalibus minutis; tibiæ toto longitudine spinosæ, spinis 11 : 11. Pedes 2^{i}, 3^{i} longi; femoribus basi leviter incrassatis; tarsorum posticorum articulus primus elongatus, reliquis computatis attamen brevior. Lamina supra-analis elongato-trigonalis, carinata; cerci longi.

This genus differs from *Ameles* in the position of the ocelli, and also in the long hind legs and coloured wings. In *Ameles* the superior ocelli are more distant from each other than they are from the inferior one, and the posterior metatarsus is scarcely longer than the second joint of the tarsus.

1. **Yersinia mexicana,** Sauss.

Acanthops mexicana, Sauss. Rev. et Mag. de Zool. xi. p. 60 (♂) (1859).

Yersinia mexicana, Sauss. Bull. Soc. Ent. Suisse, iii. p. 72 (1869); Stål, Syst. Mant. p. 52.

Ameles mexicana, Sauss. Mélang. Orthopt. i. 3e fasc. p. 250. 3; Mém. Mex., Mantid. p. 99. 1, t. 1. figg. 14 (♀), 15 (♂); Miss. Scient. Mex., Orthopt. p. 258. 1; Westw. Revis. Mantid. p. 6.

Acanthops azteca, Sauss. Rev. et Mag. de Zool. 1859, p. 60 (♀).

♀. Prasina vel grisea. Caput compressum, antice planatum. Oculi superne angulati, angulo mamillato, margine supero transverso. Vertex vix arcuatus, 4-sulcatus. Pronotum subdepressum, sparse fortiter granulatum, marginibus dense denticulatis. Elytra brevissima, basin abdominis tegentia, semicoriacea. Alæ sanguineæ; campo postico apice nigro. Pedes postici longi; metatarsus articulis sequentibus 3 simul sumptis æquilongus.

♂. Vertex transversus, subsinuatus. Pronotum vix granulatum, marginibus inermibus. Abdomen cylindricum, cercis longis.
♀. Long. 36; pronot. 9·5, femor. ant. 9·25, elytr. 7·5 millim.
♂. Long. 35; pronot. 8, femor. ant. 8, elytr. 7 millim.

Hab. MEXICO, Morelia (*Saussure*).

Obs. We are in possession of the larva (♂) of a second species of *Yersinia*, from Costa Rica, with shorter legs and tarsi, but it is too young for description.

LITANEUTRIA*, Sauss.

Litaneutria, Saussure, Societas Entomologica, 1892, p. 123.

Caput triangulare; scutellum faciale mediocre, planum, superne angulato-rotundatum. Ocelli elliptici, mediocres, in trigono regulari exserti: inferum transversum, superi obliqui, convergentes, ad exteriorem spectantes. Oculi ovato-fusiformes, divergentes, superne subprominuli, angulati, acuti (tuberculati). Vertex inter illos humilior, compressus, subacutus, ab antico subsinuatus. Pronotum minutum, brevisculum, distincte carinatum, ante basin subconstrictum.—Elytra et alæ (♂) explicata, angusta, membranacea, abdomine breviora. Elytrorum campus marginalis a medio ad apicem angustius. Alarum campus anterior angustissimus, vena ulnari furcata; (disco fusco-maculato); margine postico et apicali sublobulato.—Pedes antici breves, graciles; femora subgraciles, extus spinis 5 (ultima subapicalis), subtus spinis discoidalibus 3 brevibus. Tibiæ spinis extus 7–8. Pedes postici gracillimi; metatarsus posticus elongatus, reliquis articulis æquilongus. Abdomen (♂) elongatum, bacillare. Lamina supra-analis rotundata, carinata. Cerci mediocres, laminam infragenitalem vix superantes; hæc elongata, apice carinata, stylis minutis instructa.—Feminæ ignotæ.

This genus belongs to the group of *Gonypeta*, on account of its general form and its very long hind metatarsus. *Litaneutria* much resembles *Ameles*, but differs from it in its long tarsi and coloured wings. The carinated pronotum seems to approximate it to *Tropidomantis*, Stål; but in that genus the vertex is more elevated than the eyes, the cerci are very long, the ulnar vein of the wings is biramose, &c.

Litaneutria appears to be the only American type known of the group of *Gonypeta*. The females have probably abbreviated wings.

1. **Litaneutria ocularis**, Sauss. (*Lithaneutria ocularis*, Tab. VIII. figg. 3, 3 *a*, *b* †, *c*.)

Litaneutria ocularis, Sauss. Societas Entomologica, 1892, p. 124.

♂. Prasina, gracillima. Scutellum faciale fere duplo latius quam altum; oculi superne leviter prominuli, haud acuti, vertex inter sulcos humilior, transversus. Frons impressionibus 2 notata. Pronotum ampliatione ovata; parte basali modice angusta, quam ampliatio fere dimidio breviore. Elytra quintum abdominis segmentum tegentia, subhyalina, venis et campo marginali virescentibus vel griseis. Campus marginalis angustissimus basi ampliatus, venulis transversis rectis. Vena analis libera. Area analis venis obliquis 3. Alæ in areolis griseo-maculatæ, campo postico prope basin macula majore fusca, violascente. Campus anterior posteriorem haud multum superans, margine apicali oblique truncato, apice rotundato, sinu anali obtusissimo; vena ulnari valde ultra medium furcata. Pedes haud maculati; coxæ anticæ inermes; femora extus granulata. Lamina supra-analis fere duplo latior quam longa.
Long. 27·25; pronot. 5·2, femor. ant. 4·8, elytr. 18, latit. elytr. 3·5 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

* λιτανεύειν, to supplicate.
† In fig. 3 *b* the vertex is represented too deeply concave.

ANGELA, Serv.

Thespis, Burmeister, Handb. ii. p. 533 (ex parte); Stål, Syst. Mantid. p. 41; Brunner de W. Révis. Syst. Orthopt. p. 64.

Angela, Serville, Orthopt. p. 171 (subgen.) (1839); Saussure, Mém. Mex., Mantid. p. 57; Miss. Scient. Mex., Orthopt. p. 271; Westwood, Revis. Mantid. p. 5.

Corpus longissimum, bacillare, gracillimum. Caput compressum, transversum, breve; oculis tumidis; ore minuto.—Prothorax longissimus, coxis anticis plus quam duplo longior, prismaticus, carinatus, ampliatione parum lata, rhomboidali, collo valde angusto; ejus marginibus remote dentatis.—Elytra et alæ abbreviata. Elytra angusta, subparallela, apice rotundato. Alæ splendide coloratæ, quam elytra haud breviores, illa igitur in requiete superantes; campo posteriore venulis scalaribus numerosis reticulato. Pedes longi, gracillimi. Coxæ anticæ latere interno saltem partim nigro. Femora anteriora gracillima, plus quam dimidia parte basali inermia, in illa extus et subtus rotundato-carinata, facie infera nulla, latere interno nigro-marmorato ac punctato, sulco unguiculari ad tertiam partem apicalem excavato. Spinis discoidalibus 4: 1ª majuscula, 3ª maxima. Tibiæ anteriores breves, graciles, margine supero recto, rotundato, margine interno spinis 12–16, margine externo 4–5 armatæ, hoc longiuscule mutico, ejus 1ª spina a sequentibus paulo magis remota. Lamina supra-analis transverse trigonalis, paulo latior quam longa. Cerci compressi, foliacei, longi, latissimi, extus rugosi, apice truncati, ♂ minus lati.—♀ ♀. Elytra et alæ brevissima, 2ᵐ vel 3ᵐ abdominis segmentum haud superantia, subæquilonga. Alæ semiorbiculares.—♂ ♂. Gracillimi, pedibus filiformibus, anticis gracillimis. Elytra alis breviora. Alæ dimidium abdomen superantia, valde longiores quam latæ, apice late rotundatæ, margine externo et posteriore valde arcuato.

A genus containing extraordinary forms, resembling the slender Phasmidæ, with beautifully coloured wings and short elytra. The spines of the anterior femora are rather long; on the inner edge the last spine is long, and it is separated from the apical spine by an unarmed space. In the females the wings are semiorbicular; in the males they are longer, but very obtuse, and widely rounded at tip.

The various species of *Angela* seem to be confined to the northern part of South America and to the southern part of Central America.

Obs. Stål and Brunner de Wattenwyl have adopted the name *Thespis*, Serv., for this genus; but the name *Angela* having been used by Serville for a subdivision of his genus *Thespis*, it must be retained, and *Thespis* applied to the *T. sulcatifrons* of Serville (an African species). *T. livida* and *T. infuscata* belong to the group Miopteriges.

Synopsis specierum.

a. Alæ membranaceæ; campo postico fusco-violascente, venulis luteis, anterius fasciis splendide fusco-violaceis venulisque destitutis ornato; campo antico latiusculo, pallidiore, apice subcoriaceo. Cerci latissimi, foliacei, rugosi, truncati. (Marium elytra quam alæ paulo breviora; alarum margo posticus parum arcuatus.)

b. Abdominis segmenta haud tuberculata. Pronotum posterius leviter incrassatum, marginibus denticulatis. Elytra ♀ alis paulo breviora, area membranacea anali, basi excepta, nigra. ♀. Alæ dense scalari-venulosæ; eorum fasciæ inter maculas fuscas densissime flavo-venulosæ.

c. Alæ fasciis fusco-violaceis ♀ 2, ♂ 3, inter illas flavicantes.—[1. *brachyptera*, St.]

cc. Alæ fasciis 3 nigro-violaceis, fasciisque 3 læte aurantiis. Elytra ad stigma infuscata.—[2. *fulgida,* Sss.]

bb. Abdominis segmenta superne apice tuberculata, præsertim ultima 3. Pronotum parallelum, marginibus muticis. Alarum fasciæ flavæ minus dense venulosæ.

c. Pronoti collum ut solitum anterius attenuatum.

d. Elytrorum area membranacea analis basi excepta nigra; discus nonnunquam stigmate fusco. Elytra ♀ alis æquilonga. Alæ ♀ fasciis 2 nigro-violaceis, fasciisque splendide aurantiis variabilibus ornatis.—[3. *quinquemaculata,* St.]

dd. Elytrorum area membranacea analis nebulosa, hyalino-reticulata; discus immaculatus. Elytra alis breviora. Alæ ♀ fasciis 2–3 splendide nigro-violaceis, fasciisque 3 læte aurantiis.—4. *championi,* sp. n.

cc. Pronoti collum fere a basi parellelum. Alæ ut in *A. brachyptera* pictæ.—[5. *trifasciata,* Stål.]

aa. Alæ minus membranaceæ, rubræ vel flavæ, margine externo et postico nigro. Elytrorum area membranacea anali pellucida. (Feminæ ignotæ.) Marium elytra quam alæ sensim breviora; alæ amplæ, margine postico magis arcuato, venulis transversis invicem remotis; campo antico angustissimo, concolore; campo postico fascia transversa nigra, cum margine nigro confluente.

b. Alæ rubræ.—6. *miranda,* Sss.

bb. Alæ flavæ.—7. *perpulchra,* W.

[1. **Angela brachyptera,** Stoll.

——, Seba, Thesaur. iv. t. 68. figg. 7, 8 (♂), t. 76. figg. 7, 8 (♂) (1765).

Mantis brachyptera, Stoll, Kakkerl. t. 19. fig. 71 (♀).

Angela brachyptera, Serv. Orthopt. p. 173. 4 (♀).

Mantis versicolor, Stoll, Kakkerl. t. 8. fig. 28 (♂); Blanch. Hist. des Ins. iii. p. 13. 7.

Angela versicolor, Sauss. Mém. Mex., Mantid. p. 59. 1*; Miss. Scient. Mex., Orthopt. p. 271. 1; Westw. Revis. Mantid. p. 5, t. 3. fig. 2 (♂), fig. 3 (♀).

Mantis purpurascens, Oliv. Encycl. Méth. vii. p. 640. 7 (♂); Lichtenst. Trans. Linn. Soc. vi. p. 20. 4 (♂); Erichson, in Schomburgk's Flora und Fauna v. Brit.-Guiana, iii. p. 580 (♂).

Thespis purpurascens, Burm. Handb. ii. p. 533. 17 (♂).

Fusco-grisea (vel in vivis virescens?). Prothorax a basi ad sulcum coxalem quam coxæ anticæ duplo longior, marginibus totis remote dentatis; collo longiore anterius attenuato.

♀. Elytra alis æquilonga, corpore concolora. Alæ ad apicem primi abdominis segmenti extensæ, maculis 2 transversis fusco-purpureis, secunda submarginali; hac maculæ vel fasciæ per spatium angustum, venulis flavis transversis numerosis subcontiguis impletum, separatæ. Venulæ transversæ in reliqua ala numerosissimæ, invicem valde propinquæ.

♂. Gracillimus, fusco-testaceus. Elytra et alarum campus anterior fusco-ænea; elytra ad medium tertii abdominis segmenti extensa, margine anteriore basi fusco-limbato. Alæ angustæ, ad medium 4^{i} segmenti abdominis extensæ. Campus posterior venulis transversis pallidis invicem valde approximatis, scalaritessellatis; parte anteriore maculis transversis 4 fusco-violaceis; venulis transversis inter illas ut in

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* Saussure, to whom the males were unknown, has confounded *A. brachyptera* and *A.* 5-*maculata* under one species. The synonymy is therefore not correctly given in the work cited.

feminis densius approximatis. Cerci valde dilatati, foliacei, paralleli, in longitudinem venosi, apice truncati. Lamina supra-analis transverse trigonalis. Styli laminæ infra-genitalis minuti, graciles.

♀. Long. 115; pronot. 47, colli 9, femor. ant. 24·5, cerc. 3·75, alar. 15, elytr. 16, latit. elytr. 4·25 millim.

♂. Long. 86; pronot. 31, colli 6, femor. ant. 16, cerc. 7, alar. 31, elytr. 29, latit. elytr. 5 millim.

Hab. Guiana, Cayenne (*Mus. Genavense*); Brazil.

The wings of this species are not so brightly coloured as in *A. fulgida*; the fasciæ are of a lighter brown and less brilliantly violet; the bands between the dark fasciæ, and also the part inside the first band, are yellowish (not yellow), the yellow colour arising from the transverse venulæ. These latter are very dense, subcontiguous in this species and the following one.]

[2. **Angela fulgida,** Sauss.

Angela fulgida, Sauss. Mélang. Orthopt. ii. 4e fasc. p. 61. 1; Miss. Scient. Mex., Orthopt. p. 272. 2 (♀).

♀. *A. brachypteræ* simillima, at alis magis coloratis, fasciis 3 nigro-violaceis, 3 læte aurantiis.
Long. 88; pronot. 36, elytr. 18 millim.

Hab. Guiana, Cayenne.

The wings have very brilliant blackish-violaceous fasciæ, separated by orange-yellow bands. The reticulation resembles that of *A. brachyptera.*]

[3. **Angela quinquemaculata,** Stoll.

Mantis 5-*maculata,* Stoll, Kakkerl. t. 3. fig. 9 (♂); Oliv. Encycl. Méth. vii. p. 636. 57 (♀).

Thespis 5-*maculata,* Serv. Rev. Orthopt. p. 21. 3 (♂); Burm. Handb. ii. p. 533. 16 (♀).

Angela 5-*maculata,* Serv. Orthopt. p. 174 (♂).

Mantis picta, Lichtenst. Trans. Linn. Soc. vi. p. 20. 5 (♂) (1802).

♀. Pronotum subparallelum, collo parum longo, antrorsum parum attenuato. Pars postica pronoti utrinque fusco-maculosum et multi-punctatum, marginibus lateralibus inermibus, subtus luteis, tota longitudine fusco-maculatis. Elytra fusco-irrorata, stigmate discoidali corneo-fusco. Alarum campi antici area media lata, per venulas paucas valde remotas quadrato-reticulata. Campus posterior venulis transversis quam in *A. brachyptera* minus approximatis; anterius maculis transversis 2 fusco-violaceis, fasciaque inter illas aurantia, fasciis fuscis æquilata. Venulæ macularum flavarum haud multum approximatæ. Femora anteriora intus nigro-irrorata, margine supero subtilissime crenulato. Abdominis segmenta 2^{m}–4^{m} apice minute tuberculata, 5^{m}–7^{m} elevato-tuberculata. Cerci apice truncati, margine apicali leviter sinuato, angulo superiore rotundato-angulato producto.

Var. Alæ maculis 3 flavis; prima et tertia obsoletis.

♂. Alæ apice infuscatæ, campo postico antice maculis 3 fusco-violaceis, inter illas maculis 2 flavis.

♀. Long. 91; pronot. 39, colli 6·75, femor. ant. 20·25, cerc. 5·6, alar. 18·5, elytr. 18·5, latit. elytr. 4·5 millim.

Hab. Guiana, Cayenne (*Mus. Genavense*).

In this species the wings are wider than in *A. brachyptera*; the anterior field is rather wider, consequently the medial area is more dilated. The yellow fasciæ of the wings are not so bright as in *A. fulgida* and *A. championi*, but dull as in *A. brachyptera*, only formed by the transverse yellow venulæ.]

4. **Angela championi,** sp. n.

♀. *A. 5-maculatæ* simillima, at paulo major, fusco-fulva, ut in illa fusco-maculosa et punctata. Elytra alis paulo breviora, infuscata, stigmate lineari pallidiore. Alarum campus anterior fuscescens, diaphanus, apice opacus; campus posterior fasciis 3 splendide nigro-cæruleis, laceratis, irregularibus per fascias 2 læte aurantias separatis; ultima angusta submarginalis, intermedia lata, 1ª variabilis, antice attenuata; venulæ transversæ ad illam fasciculas flavas transversas latiores formantes; fasciæ aurantiæ quam macula media angustiores.

♀. Long.?; pronot. 49, colli 8, femor. ant. 24, alar. 20, elytr. 18·5, latit. elytr. 4·8 millim.

Hab. GUATEMALA, Cubilguitz in Vera Paz (*Champion*).

[5. **Angela trifasciata,** Stål.

Thespis trifasciata, Stål, Syst. Mant. p. 62. 3 (♀).

Hab. BRAZIL, Bahia.]

6. **Angela miranda,** Sauss.

Angela miranda, Sauss. Mém. Mex., Mantid. p. 60. 2.

♂. Alæ amplæ, rubro-roseæ; margine apicali et postico late fusco-violaceo; campi postici fascia transversa fusco-violacea, maculam rubram liberante. Venulæ transversæ campi postici invicem remotæ.—Long. alæ 31 millim.

Long. 73; pronot. 26, alar. 31, elytr. 23, latit. elytr. 4 millim.

Hab. MEXICO (*Mus. Parisiense*).

7. **Angela perpulchra,** Westw. (Tab. VIII. fig. 1.)

Angela perpulchra, Westw. Revis Mantid., App. p. 30. 16 (♂).

♂. Filiformis, fulvescens (prasina?). Prothorax subfiliformis, collo parallelo, tantum apice carinulato, marginibus subdenticulatis, illis scapi inermibus. Margines omnes pronoti lutei, nigro-punctati. Elytra infuscata, basin versus postice pallidiora, venis pallidis. Alæ amplæ, apice rotundato-attenuatæ, totæ flavo-citrinæ, venulis transversis invicem remotis; margine exteriore et posteriore latiuscule nigro-cæruleo; vitta nigra ad marginem anticum campi postici dilatata; discus campi postici ultra medium macula longitudinali nigro-cærulea, cum margine nigro plus minus confluente. Campus anterior angustus, apice fuscus, haud cærulescens. Pedes antici filiformes; coxæ intus ultra medium fuscæ; femora intus fusca, margine infero et supero fulvo, vittisque 2 flavidis ultra spinas discoidales; tibiæ 16 : 5 spinosæ.

Long. 68; pronot. 26, colli 4·75, femor. ant. 13·5, alar. 25, elytr. 20, latit. elytr. 4 millim.

Hab. NICARAGUA (*Westwood, Mus. Hopeiano*); PANAMA, Bugaba 800 to 1500 feet (*Champion*).

[HAGIOMANTIS*, gen. nov.

Caput ut in genere *Gonatista*. Pronotum anterius attenuatum. Elytra ♀ abdomen superantia, densissime transverse irregulariter venosa. Alæ ♀ vena ulnari indivisa. Femora anteriora margine supero subrecto, extus valde granulata, spinis 4 perpendicularibus, 5ª minuta vel obliterata; tibiæ graciles, supra rectæ, extus granulatæ, spinis 9 : 8; margine externo toto spinoso, spinis regularibus, gradatim longioribus. Pedes intermedii et postici longi; femoribus basi valde incrassatis; tarsis posticis longissimis, 1° articulo reliquis computatis æquilongo.

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* ἅγιος, sacred; MANTIS.

1. **Hagiomantis ornata,** Stoll.

Mantis ornata, Stoll, Kakkerl. t. 19. fig. 69 (♀); Serv. Orthopt. p. 192. 23 (♀).
Gonatista ornata, Sauss. Mém. Mex., Mantid. p. 25. 2.

Hab. Bolivia, Chiquitos (*Mus. Genavense*).

This species does not accord with the genus *Gonatista*, as it has the spines of the anterior tibiæ regular and normal (the 1st spine of the outer border not being elongate), and the pronotum contracted and rounded at its anterior end.]

[GONATISTA, Sauss.

Gonatista, Saussure, Bull. Soc. Ent. Suisse, iii. p. 54 (1869); Mém. Mex., Mantid. p. 22; Miss. Scient. Mex., Orthopt. p. 230.

This genus bears a striking resemblance to *Theopompa*, Stål, and *Humbertiella*, Sauss. (Asiatic types). The pronotum widened or truncate anteriorly, the elytra (♀) semi-membranaceous, very irregularly reticulated, and somewhat wrinkled, the head embossed, the intermediate and hind femora somewhat swollen towards the base, and the males with hyaline elytra and wings dotted with grey on the nervures, are all characters common to the three genera. But in *Theopompa* and *Humbertiella* the supra-anal plate is transverse, the anterior tibiæ are destitute of the abnormal spine, and the pronotum is rather dilated.

1. **Gonatista grisea,** Fabr.

Mantis grisea, Fabr. Ent. Syst. p. 22. 40 (♂) (1793).
Gonatista grisea, Sauss. Miss. Scient. Mex., Orthopt. p. 231, t. 6. figg. 1 (♀), 2 (♂); Mém. Mex., Mantid. p. 23. 1.
? *Mantis reticulata,* Thunb. Mém. Acad. St. Pétersb. v. p. 228 (♂) (1815).
Mantis phryganoides, Serv. Orthopt. p. 193. 30 (♂).
Mantis bifasciata, de Haan, Bijdr. Kenn. Orthopt. p. 78. 38 (♀).
Gonatista cubensis, Sauss. Bull. Soc. Ent. Suisse, iii. p. 61 (♀ ♂) (1869).

Hab. Antilles, Cuba.]

LITURGOUSA, Sauss.

Liturgousa, Saussure, Bull. Soc. Ent. Suisse, iii. p. 62 (1869); Mém. Mex., Mantid. p. 100; Miss. Scient. Mex., Orthopt. p. 259.

A South-American genus extending northwards to Central America.

1. **Liturgousa cayennensis,** Sauss.

Liturgousa cayennensis, Sauss. Bull. Soc. Ent. Suisse, iii. p. 62 (♀) (1869); Mém. Mex., Mantid. p. 101. 1.

Testaceo-virescens, omnino fusco-maculata; pedibus fusco-fasciatis. Pronoti collum obtusiusculum. Elytra fusco-rufa, obtuse rotundata, ubique maculis fuscis irrorata vel marmorata, campo marginali inter maculas virescente. Alæ obtusæ, fuscæ; campo anteriore obscuriore, basi et costa partim rufescentibus,

apice late rotundato; campo posteriore diaphano. Abdomen fusco-irroratum. Pedes valde fusco-fasciati.

♂. Alarum campus anterior apice minus obtusus.

Var. *a*. Elytra et alarum campus anterior fusco-irrorata.—*b*. Elytra fusco- et virescenti-marmorata.

♀. Long. 28–31·5; pronot. 7·6–8·6, femor. ant. 7–8·25, elytr. 15·5–20, latit. elytr. 5–6·75 millim.

♂. Long. 5·3; pronot. 6·2, femor. ant. 6, elytr. 15·5, latit. elytr. 5·6 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).—GUIANA, Cayenne (*Mus. Genavense; Prudhomme*); AMAZONS (*Mus. Genavense*).

Var. **maya.**

Color pallidior; elytra brunneo-rufescentia, plus minus fusco-punctata, campo marginali virescente. Alæ diaphano-griseæ; campo anteriore elytrorum colore, venis longitudinalibus fuscis; campo marginali pallidiore. Margo costalis alarum apice minus arcuatus; alarum apex itaque minus obtusus.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*), Temax in North Yucatan (*Gaumer*); GUATEMALA, Zapote (*Champion*).

Group **MIOPTERIGES***.

This group is composed of small species, all American, generally of a grey or fuscous colour, of very slender form, with a stick-like abdomen in both sexes, the abdomen with a triangular or lanceolated, carinated supra-anal plate.

In most of the genera the females are not winged, the wings being replaced by striated lobes of the meso- and metathorax, as in the nymphs of Mantidæ in general, but the lobes are neither articulated nor separated.

The antennæ are somewhat moniliform and ciliated. The head is small, of elliptic form, or much compressed, and the vertex has a tendency to form an elevated lobe near each eye. The prothorax is carinated, short or long: when long, its extension over the coxæ is very slight. The elytra and wings are very membranaceous and finely ciliated, with a short pubescence on all their margins: this is one of the principal characters of the group, and separates the Miopteriges from the similar types of the Old World. In the hind wings the ulnar vein is either biramose or only furcated; its base is straight and continued in a straight line with the hinder branch, while the vein itself, at its first bifurcation, is broken and directed more forwards and arcuated. Frequently the elytra are somewhat shorter than the hind wings. The abdomen is always long and very slender, of stick-like form in both sexes, even in the species with a short rhomboidal pronotum.

The legs are slender, finely pubescent, with very long metatarsi, as long as or longer than the other joints of the tarsi united; the intermediate and posterior pairs are elongated, generally quite filiform; the anterior pair become more slender and elongated as the prothorax becomes longer, according to the species, and in some types they are

* =1, 1. Stirps MIOPTERYX, *supra*, p. 129.

nearly filiform. In normal cases (Tab. X. fig. 9) the anterior legs bear on their outer margin five, and on their inner margin a variable number of spines (the subapical spine of each margin is generally distinct), and the discoidal spines are four in number; but the latter are sometimes difficult to distinguish from the other spines, when the femora become much compressed. The femora, when short, are triangular, of normal form and armature: when elongated, the spines are almost confined to the distal, or even to the apical, part of these organs; in this case they lose some of their spines, the space being inadequate for the development of the whole of these—that is, to allow sufficient room between each for them to act as separate claspers. The proximal part of the femora when without spines has its inner edge finely crenulated by a line of small granules.

The length of the tibiæ varies inversely as that of the femora, the long femora being too weak to assist the clasping action of the long tibiæ at their extremity. In the most slender forms the tibiæ are so shortened as to become almost rudimentary. This modification is very striking in *Oligonyx* and *Thesprotia*. In these types the shortness of the tibiæ causes them to lose most of their spines, and those which remain are partly transferred to the extremity of the organ; it thus happens that as there is no room for one or two apical spines on the inner margin, they are forced upwards and inserted over the last spine of the margin (Tab. IX. figg. 21, 28; Tab. X. fig. 24), or even on the dorsal face of the tibiæ (Tab. X. figg. 7, 8). Do these spines thus become useless?

When the tibiæ are very short they cannot be opposed to the femora; they are, so to speak, reduced to their claw, and it is the claw which alone presses the prey against the spines of the femur. As the claw does not reach beyond the middle of the armature of the femur, the prey can only be caught between the claw and the smaller spines which occupy the end of the femur, and seems to escape the long spines at the base (Tab. X. fig. 9). But it may be presumed that, if caught, the struggling prey must fatally impale itself on these spines by its own movements. It is therefore probable that for this purpose the species with short tibiæ have some of the discoidal and basal spines very long and perpendicular.

The conclusion to be drawn from this organization is that the elongate Miopteriges, and perhaps also the other allied species, hunt very small prey only, probably soft insects.

The species of the Old World which have been referred to *Miopteryx*, and also those of allied genera (as *Parathespis*, Sss., and *Hoplocorypha*, St.), do not belong to the group Miopteriges. They constitute a parallel series similar in form, but with glabrous wings and feet.

The following conspectus will help to distinguish the genera:—

1. *Pronotum*:
   a. breve, rhomboidale. Elytra et alæ abdominis longitudine.—[Miopteryx.]—Pseudomiopteryx.—Bantia.—Thrinaconyx.—Oligonyx (partim).
   aa. elongatius, ejus parte postica bacillari. Elytra et alæ abdomine breviora.—Oligonyx ac reliqua genera.
2. *Frons*:
   a. supra ocellum inferum mucronata.—Pseudomiopteryx.—Thrinaconyx.
   aa. mutica.—*Reliqua genera.*
3. *Femora anteriora*:
   a. in margine externo spinis 4, necnon subtus spinis discoidalibus 4 (vel per varietatem 3), armata.
      b. in margine interno spinis numerosis (10–14) instructa.
         c. Femora elongato-trigonalia.—[Miopteryx.]—Pseudomiopteryx.—Bantia.
         cc. Femora gracilia.—Musonia.—Mionyx.
      bb. gracilia, margine interno spinis minus numerosis (6–9) instructa.—Oligonyx.—Harpagonyx.—Spanionyx.—Thrinaconyx.
   aa. in margine externo spinam unicam brevem præbentia; subtus spinis discoidalibus tantum 2–3 armata.—[Thesprotia.]

[MIOPTERYX, Sauss.

Miopteryx, Saussure, Bull. Soc. Ent. Suisse, iii. pp. 55, 236 (1869); Mélang. Orthopt. i. 3e fasc. p. 270; Mém. Mex., Mantid. p. 110; Miss. Scient. Mex., Orthopt. p. 277; Stål, Syst. Mantod. p. 44.

Caput transversum, ellipticum; fronte gibberosa; vertice transverso, haud bilobato. Pronotum breve, anguste rhomboidale, parte postica paulo longiore. Elytra et alæ plus minus obtuse rotundata. Elytrorum campus marginalis per venam mediastinam tota longitudine in areas 2 subæquales divisus; quarum postica venulis sigmoidalibus divisa, antica vel costalis variabiliter biseriatim reticulata. Alæ angustæ, campo anteriore lato; vena ulnari irregulari, late biramosa, ad furcas antrorsum deflexa, apice arcuato, ramo postico cum ejus parte basali in lineam rectam continuo. Pedes antici normales. Coxæ sat graciles. Femora crassiuscula, trigonalia, extus plana, carinulata, superne acuta; margine interno multispinoso (spinis 10–13); spinis discoidalibus 4 (vel 3 si prima deficit), penultima elongata. Tibiæ fere dimidiam longitudinem femorum æquantes, compressæ, latere externo planulo, margine supero subtiliter carinato ac sulcato, marginibus inferis tota longitudine spinosis (saltem margine interno), spinis intus 7–11, extus 5–8. Lamina supra-analis trigonalis.

To this genus belong the following described species:—*ciliata*, St. (*phryganea*, Sss.), *rustica*, Fabr., Sss., *argentina*, Sss., *brunneri*, Sss., and ?*grandis*, Westw., all from South America.

1. **Miopteryx granadensis**, Sauss.

Miopteryx granadensis, Sauss., Mém. Mex., Mantid. p. 114. 5, t. 2. figg. 22, 22*a* (♂).

Gracillima, pallide fulvo-testacea. Scutellum faciale planum, parum altum, margine superiore angulato. Vertex vix arcuatus. Pronotum gracillimum, collo angusto. Elytra et alæ angusta; margine costali griseo, apice obscuro; parte apicali brunneo-grisea; venis subtilibus brunneo-ferrugineis; venulis transversis ad exsertionem opacis. Elytra quam alæ paulo breviora. Alæ apice nebulosæ, vena ulnari in ala dextra apice anguste biramulosa (in ala sinistra tantum furcata); campi antici margine antico apice arcuato, margine apicali oblique recto vel subsinuato; apex alarum itaque acutus sinumque analem latum præbens.

Pedes brunneo-punctati; tibiæ anticæ utrinque 7-spinosæ. Lamina supra-analis trigonalis, apice anguste producta. ♂.

Hab. COLOMBIA, Bogota.

This species probably extends to Panama. *M. granadensis* differs somewhat in its characters from the type of the genus. The ulnar vein of the wings is only furcate, or very narrowly biramose, instead of bearing two long distant branches. It seems to form a transition to the genus *Mionyx*.]

PSEUDOMIOPTERYX, Sauss.

Pseudomiopteryx, Saussure, Mém. Mex., Mantid. p. 107 (1871); Stål, Syst. Mantod. p. 44.

Generi *Miopterygi* forma simillimum; oculis magis tumidis; ocellis majoribus, prominulis, infero per dentem trigonalem adumbrato. Frons valde sulcata et gibberosa, retro obliqua. Vertex quam oculi altior, lobatus. Pronotum latius rhomboidale, collo gibboso, disco pone sulcum supra-coxalem bigranulatum. Elytra et alæ ut in genere laudato formata. Pedes antici crassiores. Femora anteriora trigonalia, margine interno spinis circ. 12, externo ut solitum 5, necnon spinis discoidalibus 4 subæqualibus, in lineam rectam exsertis armata. Tibiæ compressæ, latiusculæ, supra pilosellæ, sulcatæ, extus ad sulcum carinulatæ; latere interno convexiusculo, externo plano, sulcato; marginibus inferis spinis circ. 8, interno spinis longioribus, externo minoribus instructis. Unguis grandis, parum arcuatus. (Elytra et alæ infuscata.)

Synopsis specierum.

a. Elytra quam alæ breviora. Scutellum faciale trisulcatum, superne angulatum. Pronotum anterius rugosum.—[*spinifrons*, Sss. (Amer. Merid.).]

aa. Elytra quam alæ haud breviora. Scutellum faciale superne arcuatum. Pronotum anterius læviusculum.

b. Scutellum faciale lævigatum.—1. *infuscata*, sp. n.

bb. Scutellum faciale 3-granulosum.—[2. *bogotensis*, Sss.]

1. **Pseudomiopteryx infuscata**, sp. n. (Tab. IX. figg. 10–12.)

♂. Fuscus. Antennæ submoniliformes. Caput mediocre. Scutellum faciale margine supero subarcuato, basi duplo latius quam altum. Spina ocellaris acuta. Frons supra ocellos valde gibberosa, valde retro obliqua. Vertex, vel potius occiput, transversus, compressus, quam oculi paulo altior: sulcis 4 incisus utrinque ad oculos subrotundatus. Prothorax brevis, rhomboidalis, vix duplo longior quam latus; ampliatione lata, marginibus ante illam subsinuatis; collo variabiliter rugulato, gibberoso, supra granulis 4, utrinque oblique late sulcato et carinulato, extus ad carinas tenuiter granulato; sulco supra-coxali profundo; parte postica pone sulcum minute bituberculata, ac utrinque rugulata; basi in medio frequenter carinato. Margines omnes integri, pallidi, nigro-punctati (vel margines anteriores ampliationis denticulati). Basis pronoti minute bituberculata. Elytra at alæ diaphano-fusca, iridescentia, margine anteriore obscuriore. Elytra alis æquilonga, latiuscula, parallela, apice late rotundata. Alæ apice late rotundatæ, basi clariores, vena ulnari arcuata, remote biramosa. Pedes fulvi vel rufescentes, fusco-annulati et punctati; antici sat robusti; femora anteriora margine supero compresso, latere externo in carina obsoleta serie tuberculorum minutorum notato; spinæ omnes sat æquales, breviusculæ, ultimis 2 internis majusculis. Tibiæ intus 8-, extus 7–8-spinosæ, spinis marginis externi minutis, vel apice incurvis. Tibiæ 2ae, 3ae femoribus breviores. Abdomen basi carinatum, postice deplanatum. Lamina supra-analis trigonali-rotundata; cerci distinctissime articulati, apice graciles. Lamina infra-genitalis latior quam longa, stylis mediocribus instructa.

Long. 21; pronot. 4, femor. ant. 4·75, alar. 18, elytr. 17, latit. elytr. 5·7 millim.

Hab. MEXICO, Presidio (*Forrer*), Cordova (*Höge*); GUATEMALA, San Juan in Vera Paz, Las Mercedes 3000 feet, Volcan de Atitlan 2500 to 3500 feet, Zapote (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba 800 to 1500 feet, Caldera 1200 feet, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

The elytra, at first sight, appear to be shorter than the wings, but when extended horizontally they are of the same length.

[2. **Pseudomiopteryx bogotensis,** Sauss.

Pseudomiopteryx bogotensis, Sauss. Bull. Soc. Ent. Suisse, iii. p. 228 (♂) (1870); Mém. Mex., Mantid. p. 102. 2 (♂).

♂. Fulvo-griseus. Scutellum faciale elatum, 3-granulatum. Pronotum rhomboidale, ampliationis angulis acutis; collo granulato; marginibus omnibus nigro-punctatis. Elytra et alæ ampla, griseo-brunnea, iridescentia. Elytra quam alæ paulo longiora. Alarum margo externus vix sinuatus. Lamina supra-analis trigonalis. De reliquo *P. infuscatæ* simillima.

Hab. COLOMBIA, Bogota.

Perhaps a mere variety of *P. infuscata*?]

MUSONIA, Stål.

Musonia, Stål, Syst. Mantod. pp. 45, 65 (1877); Westwood, Revis. Mantid. p. 5 (ex parte).

Thespis, Saussure (ex parte), Mém. Mex., Mantid. p. 127; Miss. Scient. Mex., Orthopt. p. 275; Serville, Orthopt. p. 171 (ex parte).

Corpus bacillare, modice longum vel longissimum. Caput transversum, ellipticum, antice plus minus planatum, fronte supra ocellos sulco transverso utrinque arcuato exarata. Vertex subcompressus, transversus, quam oculi haud vel parum altior, nonnunquam bilobatus. Prothorax longus, ♀ modice gracilis; marginibus tota longitudine denticulatis; collo breviusculo, antrorsum attenuato, retro dilatato. Pedes antici graciles. Femora in dimidia parte apicali spinosa; extus spinis 5, intus spinis 10–12 alternatim majoribus ac minoribus, alternatimque ad exteriorem et ad interiorem deflexis, instructa; basi spinis discoidalibus 4; tertia longissima, quarta incumbente. Tibiæ anticæ graciles, normales, compressæ; tertiam vel quartam partem femorum vix æquantes, in unguem validum arcuatum excurrentes; margine superiore rotundato, haud vel subtilissime sulcato; marginibus regulariter spinosis; margine externo spinis 4–6, regularibus, subremotis, interno spinis 6–10 tota longitudine armatis; ultima libera, haud ad unguem apposita. Lamina supra-analis elongata, lanceolata. Cerci acuti, longitudine variabiles; laminam supra-analem superantes; articulis longioribus vel illi breviores articulis brevissimis.

♂. Elytra et alæ plus minus angusta. Elytrorum campus marginalis per venam mediastinam in areis 2 inæqualibus divisa, area marginali latiore.

This genus includes the larger species of the group Miopteriges. Although occasionally very elongate and slender, the body is somewhat more robust than in the other genera. The spines of the anterior tibiæ are generally very regular, but they are sometimes unequal in length; the innermost spine is placed in its usual position, and is not transferred upwards to near the insertion of the claw as in *Mionyx*.

To this genus belong the following species:—*Thespis conspersa*, Sss. (South America); *vicina*, Sss. (Colombia); and ?*infumata*, Serv. (Brazil).

Synopsis specierum.

a. Femora anteriora plus quam dimidia parte basali inermia, paulo ultra medium latiora. Species majores, vertice ad oculos lobato. Elytra (♂) latiora, irregulariter reticulata.—[1. *major*, sp. n.] ; (*conspersa*, Sss.).

aa. Femora anteriora vix dimidia parte basali inermia, in medio vel ante medium latiora. Vertex ad oculos vix lobatus.

b. Pronotum elongatum. Tibiæ anteriores spinis regularibus armatæ.—[2. *cubensis*, Sss.] ; (*vicina*, Sss.).

bb. Pronotum modice longum. Tibiæ anteriores intus spinis inæqualibus armatæ.—3. *femorata*, sp. n.

[1. **Musonia major**, sp. n. (Tab. X. figg. 17–19.)

♀. Magna, elongata, grisea, sat robusta. Caput antice planatum, ore parum deflexo. Frons in partes subæquales per sulcum transversum subrectum divisa ; pars supera tamen paulo altior, foveolato-4-sulcata. Vertex oculis leviter altior, lobis juxta-ocularibus humilibus, rotundatis vel subtrigonalibus, inter illos transverse subsinuatus. Prothorax robustus, elongatus, parallelus, rare remote granulatus ; marginibus remote denticulatis ; ampliatione parum lata, collo brevi, antice attenuato, marginibus rectis. Pars antica 5^{am} partem totæ longitudinis æquans. Pedes fusco-fasciati. Coxæ retro basin pronoti haud attingentes, postice et antice granulatæ, marginibus fere integris, pilosellis. Femora gracilia, ad 1^{am} spinam ampliata, parte inermi elongata, parallela, parte armata breviore, gradatim attenuata ; latere interno sulco unguiculari fusco vel cum macula obscura. Tibiæ extus spinis 5 (ultima majore conica), intus spinis 9, fere totum marginem occupantibus, apicalibus 2 majoribus. Lamina supra-analis trigonali-lanceolata, apice subacuto, apicem abdominis vix superans. Cerci illam parum superantes, parum longi, teretes, articulis *omnibus brevibus*, submoniliformibus, circ. 12.

♂. Fulvo-griseus, robustus, staturæ fere feminæ. Vertex quam oculi haud altior, utrinque lobo juxta-oculari rotundato, parum prominulo. Prothorax minus longus, marginibus nigro-tessellatis. Elytra et alæ fulvo-grisescentes. Elytra et alarum pars apicalis in venis elongato-brunneo-maculosis ; elytrorum venæ frequenter interrupte brunneæ. Elytra inter venas irregulariter reticulata, campo marginali duplice serie areolarum instructo. Alæ quadrato-reticulatæ. Lamina supra-analis ?

♀. Long. 57·5 ; pronot. 19·8, femor. ant. 12·3, lam. supra-anal. 2·5 millim.

♂. Long. — ? ; pronot. 15·8, femor. ant. 10·5, elytr. 32, latit. elytr. 7·2 millim.

Hab. South America (*Mus. Genavense*).]

[2. **Musonia cubensis**, Sauss.

Thespis cubensis, Sauss. Mém. Mex., Mantid. p. 127, t. 1. figg. 29, 29 *a* (♂).

♂. Fulvus, gracilis, elongatus. Caput breve, transversum, antice planatum ; trigono ocellarum nigrescente ; fronte parum elevata, parum sulcata. Vertex transversus, subarcuatus ; lobis juxta-ocularibus vix ullis. Prothorax (♂) gracilis ac elongatus, fusco-punctulatus ; marginibus subtiliter denticulatis ; parte postica quam antica plus quam duplo longiore ; collo angustissimo, parallelo. Elytra et alæ valde angusta, subhyalina, venis fulvis, rectis. Elytra ad 5^{m} abdominis segmentum attingentia, leviter fulvescentia ; apice anguste rotundata. Eorum campus marginalis a medio angustissimus ; area mediastina per venulas obliquas divisa. Campus discoidalis inter venas venis spuriis decoloribus instructus, areolis late quadratis obsitus ; venulis transversis ad exsertionem incrassatis, fulvis. Alarum campus anterior angustus ; sinu apicali distincto. Pedes antici graciles. Coxæ retro basin prothoracis haud attingentes, postice granulatæ, Femora dimidia parte apicali spinosa, in tertia parte basali latiora, dehinc gradatim attenuata. Tibiæ rectæ, extus dentibus 5 brevibus, intus 10 minoribus, primis 5 tuberculiformibus. Lamina supra-analis longissima, lanceolata, acuta, stylos superans. Cerci elongati, articulis 3 ultimis laminam supra-analem superantibus, ultimo acuto.

Long. 43 ; pronot. 12, femor. ant. 8·6, elytr. 22, latit. elytr. 4·5 millim.

Hab. Antilles, Cuba (*Mus. Genavense*).]

3. **Musonia femorata,** sp. n. (Tab. X. figg. 20, 21.)

♀. Parum elongata, fulva. Caput fere illo *M. majoris* conforme, ore tamen magis deflexo, sulco frontali magis arcuato; fronte 4-foveolata. Vertex transversus, vix arcuatus; quam oculi leviter altior, ad oculos lobum rotundatum vix prominulum efficiens. Prothorax mediocris, vix granulatus, marginibus subtilissime denticulatis; collo mediocri, antice attenuato, marginibus lateralibus sinuatis; parte postica quam pars antica vix duplo longiore. Coxæ anticæ retro ad basin pronoti attingentes, fusco-punctatæ. Femora latiuscula pro genere, paulo plus quam in dimidia longitudine spinosa; maximam latitudinem in medio attingentia, basin et apicem versus attenuata. Tibiæ extus spinis 5, 1ª paulum remota; intus spinis 8 (1ª–3ª minutæ; 4ª major; 5ª, 6ª minores; 7ª, 8ª maximæ). Lamina supra-analis trigonali-lanceolata, subacuta, abdominis apicem leviter superans ut in *M. majore*. Cerci teretes, elongati, articulis elongatis. Long. 31; pronot. 8, femor. ant. 6, lam. supra-anal. 1·75 millim.

Hab. NICARAGUA, Chontales (*Janson*).

MIONYX *, Sauss.

Mionyx, Saussure, Societas Entomologica, 1892, p. 122.

Corpus gracillimum, bacillare, nonnunquam brevius. Caput transversum; fronte retro-vergente, gibberosa; vertice quam oculi haud altiore, interdum lobata. Prothorax collo angusto, marginibus partis posterioris subtilissime denticulatis. Elytra et alæ variabilia, angusta vel obtusiora. Elytrorum vena media furcata, a ramo 1° venæ ulnaris remota. Pedes antici gracillimi. Femora gracilia, plus quam dimidia parte apicali spinosa, margine interno spinis 10 mediocribus; 3 penultimis minutis; spinis præapicalibus distinctis; spinis discoidalibus 4; secunda et tertia majoribus, tertia maxima. Tibiæ compresso-teretes; eorum margo internus spinis 6–7, quarum 3 primæ minimæ; ultima leviter ad superum dejecta, itaque ad unguem apposita; margo externus dentulis 3–4, spinaque apicali consueta longiore. Unguis mediocris vix arcuatus. Lamina supra-analis trigonalis vel elongatiuscula, abdominis apicem attingens.

This genus is closely allied to *Musonia*. The forehead is not flattened, and the anterior tibiæ are not so closely spinose; the spines are short, unequal on the inner side. The principal difference is in the position of the last spine on the inner margin of the anterior tibiæ, this being transferred upwards to near the claw.

Synopsis specierum.

a. Femina.

Fulva; vertice utrinque sublobato; femoribus anticis gracillimis, parte apicali haud insigniter attenuata. (Elytra et alæ ♂ pallida.)—1. *rapax,* sp. n.

aa. Mares.

b. Fusci; elytris et alis diaphano-fuscis.

c. Alæ apice rotundatæ.

d. Elytra et alæ lata, apice obtusissime rotundata. Femora anteriora basi et apice æque lata. Vertex utrinque bilobatus.—2. *ferus,* sp. n.

dd. Elytra et alæ angusta. Alarum campus anterior apice ultra campum posteriorem productus. Femora anteriora apice quam basi graciliora. Vertex transversus.—3. *sævus,* sp. n.

cc. Alæ margine apicali oblique truncato. Vertex transversus.—4. *lineativentris,* Stål.

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* μείον, less, smaller; ὄνυξ, claw.

bb. Fulvo-griseæ; elytris et alis subvitreis, grisescentibus. Vertex bilobatus.

c. Elytra et alæ brunneo-punctulata. Alæ obtusæ.—5. *dohrnianus*, sp. n.

cc. Elytra et alæ hyalino-fulvescentia, venis apice brunneis.—[6. *surinamus*, Sss.]

1. **Mionyx rapax**, sp. n. (*Musonia rapax*, Tab. X. figg. 22–25.)

♀. Minuta, gracilis, fulvescens, fusco-punctata. Caput latiusculum; fronte plana, elevata, per carinulam obtusangulatam divisa. Vertex compressus, quam oculi altior, transversus, utrinque ad sulcos rotundato-prominulus, inter lobum et oculos utrinque declivis. Prothorax parum elongatus, sparse granulosus, supra tuberculis nigris rarioribus conspersus, marginibus planis subtilissime subdenticulatis; ampliatione lata, utrinque deflexa; collo lato, antice attenuato. Pars postica quam pars antica pronoti plus duplo longior. Pedes fusco-punctulati; antici modice graciles. Coxæ retro basin prothoracis attingentes, rectæ, basi crassiores, gradatim attenuatæ marginibus integris; facie postica granulata. Femora in dimidia parte apicali spinosa; parte inermi parallela, basi vix coarctata. Tibiæ breves, compressi, 4^{am} partem femorum æquantes, ungue longissimo quam metatarsus haud breviore. Margo exterior spinis 4 (3 primæ minutæ, graciles; 1^{a} prope basin exserta a sequentibus remota). Margo interior spinis 6–7 marginem totum occupantes; primæ 3 (vel 2) minimæ; 4^{a}, 6^{a}, 7^{a} longæ; 5^{a} minuta. Pedes postici modice longi; tibiis fusco-annulatis. Lamina supra-analis trigonali-lanceolata, laminam infra-genitalem paulum superans, apice hebetata. Cerci breves, apicem laminæ supra-analis vix attingentes, articulis brevissimis.

Long. 20; pronot. 7, femor. ant. 5·5, lam. supra-anal. 2 millim.

Hab. Costa Rica, Caché (*Rogers*).

2. **Mionyx ferus**, sp. n. (Tab. X. figg. 15, 16.)

♂. Fuscus vel fulvo-irroratus. Caput mediocre, fronte inter sulcos elongato-trituberculata; vertice transverso oculis vix altior, ad illos utrinque lobum rotundatum prominulum obferens. Prothorax gracilis, modice longus, sparse crasse granulatus, rugulosus, marginibus crassiuscule, obtuse denticulatis; ejus pars postica quam pars antica vix duplo longior, angusta. Collum breviter parallelum; ampliatio angulata. Elytra et alæ ampla, apice obtusissime rotundata; elytra et campus anterior alarum, saltem apice infuscata, maculis minutis luteis conspersa. Elytra lata; campus marginalis basi dilatatus, triseriatim reticulatus, a medio angustissimus; venæ campi discoidalis leviter irregulares, inter venulas subundulatæ; venulæ in areis 4 anticis fuscæ, apice attenuatæ; venæ spuriæ longitudinales illarum arearum valde reticulosæ, decolores. Alæ elytris æquilongæ, apice vix attenuatæ, latissime rotundatæ, incisura apicali vix ulla; campus posterior et partim anterior pallidius infumati; anterior posteriorem parum superans. Pedes fulvi, postici fusco-fasciati, antici fusco-marmorati et punctati. Coxæ anticæ a medio attenuatæ, remote ciliatæ, retro basin prothoracis æquantes. Femora modice gracilia; eorum latitudo maxima paulo ultra medium sita; margines inferiores tantum dimidia parte apicali spinosæ, margine interiore serrulato-fimbriato. Tibiæ 4^{am} partem femoris æquantes, rectæ, margine supero apice arcuato; extus dentibus minutis 4–5 (ultima vix majore, 1^{a} a sequentibns remota, ante medium sita); intus spinis brevibus 4 (ultimis 2 longioribus rectis, 2^{a} minore), insuper basi dentulis minimis 3. Lamina supra-analis trigonalis, plana, æque longa ac lata, acuta, a lamina infra-genitali superata. Cerci articulis circiter 10.

Long. 29·5; pronot. 8, femor. ant. 6·5, elytr. 19·5, latit. elytr. 5·75 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

3. **Mionyx sævus**, sp. n. (Tab. X. figg. 12–14.)

♂. Gracillimus, fuscus, fulvo-irroratus. Vertex transversus, vix arcuatus, oculorum altitudine; frons infra illum inter sulcos obsolete tri-verrucosa. Prothorax leviusculus, subelongatus, quam in *Oligonyche gryphe* brevior, prismaticus, parallelus, marginibus subtiliter denticulatis; collo angustiore, subparallelo, modice longo. Pars posterior parte anteriore duplo longior. Elytra et alæ angusta, diaphano-fuliginosa, sub-iridescentia. Elytra 5um abdominis segmentum tegentia; campus marginalis a medio valde attenuatus, venulis sub-obliquis regularibus quadrato-reticulatus; margo anterior et ejus venæ ad apicem parum arcuati; venulæ campi discoidalis diaphanæ, irregulares, in areis ulnaribus transversis. Alæ elytris æquilongæ vel paulo

breviores, margine antico obscuriore, venulis transversis a supero brunneis, in certa luce luteis; campus anterior angustus, posteriorem sat superans, sinu anali itaque distincto; ramus anterior furcæ venæ ulnaris arcuatus. Pedes anteriores graciles, fusco-punctati. Coxæ anticæ retro ad basin prothoracis attingentes, marginibus integris, fusco-punctatæ, posterius marmoratæ. Femora fusco-marmorata, apice pallida, plus quam dimidia parte spinosa, a medio ad apicem attenuata, intus spinis 12, scilicet 6 alternatim minores ac majores, 4 minutæ, 1 major, ultima dentiformi. Tibiæ annulis vel maculis 2 fuscis, quarta parte femorum vix longiores; margo internus spinis 4 (2ª minuta, 4ª longiore ungue apposita leviter ad superum rejecta) necnon basi dentulis minutis 3; margo externus spinis 4, primæ 3 minimæ, 1ª a sequentibus remota, ante medium sita, ultima major. Pedes intermedii et posteriores lutei, fusco-fasciati. Abdomen elongatum. Lamina supra-analis anguste trigonalis, carinata, infragenitalem parum superans. Cerci prominentes, 10–12-articulati.

Long. 35; pronot. 8, femor. ant. 5·5, elytr. 19·25, latit. elytr. 4·3 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

4. **Mionyx lineativentris,** Stål.

Musonia lineativentris, Stål, Syst. Mant. p. 66 (♂) (1877); Westw. Revis. Mantid. p. 6.

♂. Gracilis, obscurus. Vertex utrinque haud lobatus. Prothorax modice longus; ejus pars postica quam coxæ anticæ longior. Elytra et alæ infuscata. Elytra alarum longitudine. Alæ margine apicali campi antici truncato. Femora antica intus ad marginem inferiorem maculis 2 nigris, altera media et extus linea longitudinali basali nigra notatis; margine interiore spinis 9–10 armata. Tibiæ extus spinis 3–4, intus 4 alternis magnis alternis parvis, armatæ et præterea ad unguem spina magna, a margine inferiore nonnihil remota. Venter linea longitudinali subtili media in apice segmentorum ampliata, nigra, ornatus.

Long. 33; pronot. 9, elytr. 21, alar. 20, femor. ant. 6 millim.

Hab. PANAMA, Chiriqui (*Stål*).

5. **Mionyx dohrnianus,** sp. n. (Tab. IX. fig. 16.)

♂. Griseus vel fulvescens. Vertex valde compressus, ad oculos lobo rotundato prominulo, inter illos transversus, antice marginatus, margine in medio per gibbum frontalem interrupto. Prothorax breviusculus; ejus pars postica parte anteriore haud longior, ante medium bituberculata; ampliatio brevis ac lata, angulis rotundatis, collo anterius attenuato, rugato et granulato. Margines pronoti remote denticulati, ad ampliationem anguste testacei, pone tuberculos discoidales et in apice colli haud translucidi. Elytra et alæ vitrea, leviter nebulosa, venis brunneis. Elytra alis paulo longiora, dense irregulariter reticulata, venulis gracilibus haud coloratis; campus marginalis et margo posterior brunneo-punctati; discus ad venas irregulariter fusco-punctatus. Alæ apice ad marginem fusco-punctatæ, venis infuscatis, margine apicali fusco-punctato; campo anteriore obtuso, sinu anali nullo. Pedes brunneo-fasciati. Coxæ anteriores prothoracem retro superantes. Femora quam in speciebus præcedentibus crassiora, in medio latitudine latiora, basi et apice æqualiter attenuata; spinæ dimidiam partem apicalem replentes. Tibiæ spinis extus 5, intus 8. Lamina supra-analis trigonalis, infragenitalem haud vel vix superans. Cerci fulvi.

Long. 25; pronot. 6, femor. ant. 5·5, elytr. 20, latit. elytr. 5·25 millim.

Hab. GUATEMALA (*coll. Dohrn*).

This very distinct species differs from its allies in having the anterior femora triangular, and the pronotum short and more broadly dilated. The wings are also differently coloured; they are broader than in *M. sævus*, and narrower than in *M. ferus*, but as the apex is shaped nearly as in the latter, the anterior field is not so much projected beyond the posterior.

[6. **Mionyx surinamus,** Sauss.

Thespis surinama, Sauss. Bull. Soc. Ent. Suisse, iii. p. 70 (♂) (1869); Mém. Mex., Mantid. p. 129. 3 (♂).

Musonia surinama, Stål, Syst. Mant. p. 66. 2 (♂).

Hab. VENEZUELA; GUIANA, Paramaribo, Surinam.]

[THESPROTIA, Stål.

Oligonyx, Sect. 2ª, Saussure, Mém. Mex., Mantid. p. 117 (1871).

Thesprotia, Stål, Syst. Mantod. p. 45 (1877).

Corpus bacillare, longissimum, gracillimum. Caput transversum vel elevatum, antice planatum; fronte supra ocellos ♀ carinula angulata notata; vertice lobis juxta-ocularibus prominulis. Prothorax elongatus, marginibus ♀ subtilissime denticulatis; collo angustissimo, parallelo, elongato. Pedes antici filiformes; coxæ in medio leviter curvatæ, margine supero-anteriore medio leviter sinuato. Femora valde compressa, tantum in 3ª parte apicali spinosa, margine interno spinis 6–8 armato, a spinis reliquis ægre distinguendis (2ª vel 3ª frequenter longissima); *margine externo spina unica*, brevi, in media parte armata marginis exserta; basi spinis discoidalibus 3–4 (secunda plerumque longissima). Tibiæ rudimentariæ, basi coarctatæ, teretes, subtus haud sulcatæ, ungue longiore armatæ; spinis extus 1, intus 2, quarum una recta, ad unguem apposita, altera major, arcuata, absolute ad superum dejecta, complete dorsalis, divergens. Lamina supra-analis lanceolata, valde elongata.

♂ ♂. Elytra et alæ angusta. Elytrorum vena mediastina in dimidia parte basali venæ discoidali sat propinqua, parallela, dehinc ad marginem costalem divergens. Areæ anterior et posterior campi marginalis apice remote transverse venulosæ; area anterior basi irregulariter reticulata; area posterior indivisa, venulis nullis excepto ad apicem. Vena media indivisa. Alarum areæ binæ campi marginalis late quadrato-reticulatæ.]

In this very singular genus the anterior legs are more aberrant in form than in any other type of the Family Mantidæ. The femora are strongly compressed, and have a single spine only on the outer margin (difficult to distinguish), this being placed close to the long spine of the inner margin. The tibiæ are so rudimentary that they cannot be opposed to the spines of the femora for grasping purposes, except with their long claw; they are truncated, and terminate, so to speak, in four spines, of which one, placed on the superior face, large and arcuate, appears to be a very powerful weapon. For what purpose the tibiæ are thus formed, or how these insects are able to capture their prey with such a weapon, it is impossible to understand. They probably live on very small insects.

Stål has separated these Mantids from the genus *Oligonyx*, Sauss., on account of the rudimentary anterior tibiæ, the very long filiform body, and the more compressed elevated vertex. They agree very nearly with that genus, but the armature of the anterior tibiæ, although belonging to the same type, is rather different, the last two spines of the inner side being equally apical; the penultimate spine, however, instead of the apical (which is smaller and contiguous to the claw), is transferred upwards.

Thesprotia seems to be a South-American type, but it probably extends to Central America.

Mantis filum, Licht., from Surinam, probably belongs to this genus.

Synopsis specierum.

a. Vertex quam oculi valde altior, lobis juxta-ocularibus trigonalibus. — [1. *vidua,* sp. n.] ; [2. *subhyalina,* Sss.].

aa. Vertex minus elevatus, lobis juxta-ocularibus rotundatis.

b. Fulvo-griseæ, alis hyalino-griseis.

c. Major. Pedes antici subtiliter fusco-punctulati, intus haud nigro-varii.—[3. *filiformis,* Sss.]

cc. Minor. Pedes antici intus nigro-varii.—[4. *macilenta,* sp. n.]

bb. Fusca, alis fusco-diaphanis.—[5. *fuscipennis,* sp. n.]

[1. **Thesprotia vidua,** sp. n.

Oligonyx subhyalina, var., Sauss. Mém. Mex., Mantid. p. 125.

♀. Aptera, gracillima, bacillaris, prasina vel flavescens. Caput compressum, planatum ; oculis ellipticis, tumidis. Vertex quam oculi altior, dente juxta-oculari utrinque obtuso. Prothorax et pedes *Th. fuscipenni* simillimi, sparse nigro-punctati. Femora anteriora spinis tamen longioribus, spinis discoidalibus 3, 2ª majore ; margine interno spinis 6 apice nigris, 2ª maxima, 3ª et 5ª minimis ; margine externo 1. Tibiæ spinis consuetis apicalibus 3 armatæ, spina basali nulla. (Coxæ intus ubique fusco-punctulatæ. Femora intus tota longitudine linea nigra notata, extus punctis fuscis rarioribus conspersa. Tibiæ fusco-punctatæ, spinis apice nigrescentibus.) Abdomen basi carinatum, 5° segmento valde coarctato ; segmentis sequentibus iterum latioribus. Lamina supra-analis lanceolata, abdomen leviter superans, tectiformis, valde carinata, apice leviter hebetato. Cerci longiusculi.

Long. 5·7 ; pronot. 18·5, femor. ant. 11·2, lam. supra-anal. 3·75 millim.

Hab. South America (*Mus. Genavense*).

Perhaps the female of *T. subhyalina* ?]

[2. **Thesprotia subhyalina,** Sauss.

Oligonyx subhyalina, Sauss. Mém. Mex., Mantid. p. 124. 6, fig. 27 (♂) (excl. var.).

Hab. Brazil.]

[3. **Thesprotia filiformis,** Sauss.

Oligonyx filiformis, Sauss. Mém. Mex., Mantid. p. 123. 4, fig. 26 (♂).

Hab. Brazil.]

[4. **Thesprotia macilenta,** sp. n.

♀. Minor, gracillima, filiformis, grisea, brunneo-punctulata. Frontis carina distincta, transverse subarcuata. Vertex subsinuatus, quam oculi leviter altior, utrinque lobo juxta-oculari rotundato, parum elevato. Pronotum longissimum, collo angusto. (Coxæ anticæ intus nigrescentes. Femora intus linea vel macula elongata irregulari nigra ornata. Tibiæ intus nigræ.) Abdomen carinulatum ; segmentis 1°–5ᵐ apice subincisis, nonnunquam tuberculo minuto apicali notatis. Lamina supra-analis lanceolata, apice hebetata, cercos haud superans, truncato-rotundata.

♂. Elytra et alæ subhyalina, venis fulvo-testaceis. Elytrorum venulæ ad exsertiones coloratæ, in medio vel antice decolores.

♀. Long. 38 ; pronot. 12·75, femor. ant. 6·75 millim.

♂. Long. — ? ; pronot. 12·75, femor. ant. 8·25, elytr. 19 millim.

Hab. Brazil (*Mus. Genavense*).]

[5. **Thesprotia fuscipennis,** sp. n.

♂. Longissimus, gracillimus, filiformis, griseus; pedibus fusco-punctatis, anticis maculosis. Caput transversum; vertice transverso, quam oculi haud altiore, sed utrinque dentem obtusum juxta-ocularem efficiente. Prothorax longissimus, carinatus, haud granulatus; marginibus anguste pallidioribus, nigro-punctatis, densissime subtilissime denticulatis, brevissime fimbriatis; collo parallelo vel subconstricto, apice truncato. Elytra et alæ infuscata, venis fuscioribus. Elytra alis breviora, venulis transversis ad venas opacis, dehinc et venis spuriis subtilissimis. Alæ angustissimæ, vena ulnari in parte distali furcata. Pedes omnes filiformes. Coxæ anticæ valde nigro-maculosæ; femora extus sparse nigro-punctata, intus in longitudinem nigro-maculata vel lineata. Femora intus linea interrupta nigra; utrinque tantum in 3ª parte apicali spinosa; spinis discoidalibus majoribus 4; margine interiore spinis 6 brevibus, prima inter 2am et 3am discoidalem perpendiculari, longiore; reliquis nigris minutis; 4ª, 5ª minimis; margine exteriore spina unica ultra 4am discoidalem exserta; spinis apicalibus nullis. Tibiæ anticæ spinis 4, scilicet spinis apicalibus 3 plus unguis subrectus (spina supera majore arcuata); necnon spina imæ baseos externa. Lamina supra-analis ?

♀. Mare simillima. Femora anteriora latere interno fascia longitudinali nigra interrupta. Lamina supra-analis cercos leviter superans, apice rotundata.

♂. Long. circa 55; pronot. 15·6, femor. ant. 10, elytr. 25·5, latit. elytr. 5, long. alar. 27 millim.

♀. Long. 53; pronot. 18·5, femor. ant. 10 millim.

Hab. Brazil, Rio Janeiro (*Göldi*: ♀ ♂).]

OLIGONYX, Sauss.

Oligonyx, Sect. 1ª, Saussure, Bull. Soc. Ent. Suisse, iii. p. 58 (1869); Mém. Mex., Mantid. p. 117; Stål, Syst. Mantod. p. 45; Saussure, Societas Entomologica, 1892, p. 122.

Corpus quam in genere *Thesprotia* minus gracile, ♀ crassiusculum. Caput transversum, antice planatum; fronte subgibberosa, supra ocellos sulco ♀ transverso arcuato notata; vertice compresso, acuto, bilobato. Prothorax modice longus vel brevis, totus tenuiter denticulatus, ampliatione rhomboidali; collo elongato, angusto, anterius attenuato, vel ♂ parallelo. Pedes antici graciles; coxæ carinis valde expressis, rectis. Femora plus quam dimidia parte apicali spinosa, margine interno tantum spinis 7–8; apice spinula præapicali utrinque; basi spinis discoidalibus 4, quarum ultima minima, reliqua subæqualia. Tibiæ brevissimæ, teretes, superne intus carinulatæ, spinis extus 1 magna, intus 8 (1—4+II+I); ultima interna ad superum dejecta, subdorsali, subrecta, nec erecta, nec divergens (præcedentibus 2 longiusculis, basalibus 4 minutis dentuliformibus). Tibiarum spinæ in feminis validæ. Lamina supra-analis elongato-lanceolata.

♂ ♂. Elytra et alæ angusta. Elytrorum area costalis plus minus irregulariter reticulata, area discoidali-mediastina remote oblique venulosa; vena media indivisa.

In this genus the body is neither so elongated nor so slender as in *Thesprotia*; sometimes the pronotum is short, as in *Miopteryx*. The head is more transverse, with swollen eyes; and the vertex, although compressed, and with two juxta-ocular rounded lobes, is not, or but little, elevated. The form of the anterior tibiæ is the most evident character of the genus, not being truncate as in *Thesprotia* (although still short), but slender and armed with more numerous spines.

The genus is peculiar to Central and North America. The following known species belong to it:—*O. brunneri*, Sss. (Colombia); *O. scudderi*, Sss. (North America, Georgia); *O. uhleri*, St. (Louisiana); *Mantis parva*, Drury (*Miopteryx parva*, Sss.) (America); and six others are described below.

Synopsis specierum.

I.

1. *Mares*:

a. Corpus gracillimum; prothorax vix dimidia longitudine elytri, coxæ anticæ retro illius basin vix attingentes. Elytra haud fusco-tessellata.—1. *mexicanus*, sp. n.

aa. Elytra prothorace circiter triplo longiora, fusco-punctulata, coxæ anticæ illium retro leviter superantes. Prothorax crassiusculus.

b. Prothorax longiusculus.

c. Elytrorum venulæ transversæ ad exsertionem fuscæ.

d. Prothorax crassiusculus, collo angusto elongato; elytra quam prothorax haud triplo longiora.—2. *bollianus*, sp. n.

dd. Prothorax collo minus elongato; elytra quam prothorax triplo vel plus quam triplo longiora.—3. *striolatus*, sp. n.

cc. Elytrorum venulæ transversæ haud infuscatæ, venæ longitudinales fusco-notulatæ; prothorax gracillimus.—4. *punctulatus*, sp. n.

bb. Prothorax brevis, sub-rhomboidalis; elytra prothorace quadruplo longiora, venis fusco-punctatis.—5. *tessellatus*, sp. n.

1, 1. *Feminæ*:

a. Prothorax parum longus. Coxæ anticæ robustæ, basi incrassatæ, prothoracem retro minime superantes. Lamina supra-analis abdomen minime superans.—2. *bollianus*, sp. n.

aa. Prothorax elongatus. Coxæ anticæ graciliores retro prothoracem haud superantes. Lamina supra-analis abdomen sensim superans.—6. *toltecus*, sp. n.

II.

Mares:

1. *Margo infero-internus femorum anteriorum*:

a. in $\frac{2}{5}$ ejus longitudinis inermis.—1. *mexicanus*; 2. *bollianus*; 3. *striolatus*; 4. *punctulatus*.

aa. vix in tertia parte ejus longitudinis inermis.—5. *tessellatus*.

2. *Lamina supra-analis*:

a. elongato-trigonalis, stylorum apicem attingens.—1. *mexicanus*; 2. *bollianus*; 3. *striolatus*.

aa. trigonalis, per stylos superata.—4. *punctulatus*; 5. *tessellatus*.

3. *Vena discoidalis elytri*:

a. apice vix arcuata.—1. *mexicanus*; 2. *bollianus*; 3. *striolatus*.

aa. apice distinctissime arcuata: Minus fortiter.—4. *punctulatus*. Fortiter.—5. *tessellatus*.

1. **Oligonyx mexicanus,** sp. n. (Tab. IX. figg. 13–15.)

♂. Elongatus, gracillimus, fulvo-griseus. Vertex quam oculi parum altior, lobis juxta-ocularibus rotundatis, parum elevatis. Prothorax longiusculus, gracillimus (♂), collo elongato, gracillimo, angustissimo, parallelo. Pars postica pronoti quam pars antica duplo longior. Elytra et alæ angustissima, subhyalina, apice anguste rotundata, venis fulvo-testaceis, haud fusco-tessellatis. Elytra ad 5^{m} abdominis segmentum extensa, venulis transversis rectis vix obliquis excepto in area furcæ discoidalis. Pedes antici gracillimi, coxis retro vix ad basin prothoracis attingentibus. Femora quam pronoti pars postica vix longiora. Tibiæ anteriores intus prope basin dentulis 2 armatæ vel absque dentulis. Lamina supra-analis anguste-trigonalis, apice prominula. Cerci longissimi subcompressi, articulis longis.

Var. Pronotum et pedes fusco-punctata.
Long. 36; pronot. 9·8, femor. ant. 6·1, elytr. 19, latit. elytr. 5 millim.

Hab. MEXICO, Presidio (*Forrer*); GUATEMALA, Cubulco in Vera Paz (*Champion*).

In this species the prothorax is relatively much longer than in *O. bollianus* ♂, and only half as broad; the elytra are also proportionately shorter. The wings are not quite so narrow as in *O. striolatus*, and the longitudinal veins of the elytra are not so straight. The middle vein and the first ulnar vein are slightly bent at about three-fourths of their length. The anal (subapical) emargination of the wing is more obtuse than in the other species of the genus, somewhat as in *Harpagonyx gryps*.

2. **Oligonyx bollianus,** sp. n. (Tab. IX. fig. 17.)

♂. Parum gracilis, fulvo-griseus. Vertex acute compressus, quadrisulcatus, quam oculi altior, utrinque ad oculos lobo angulato vel rotundato quam vertex medius paulum altiore. Prothorax mediocris pro genere, crassiusculus, superne et subtus punctis nigris graniformibus conspersus; parte postica quam pars antica paulo longiore, marginibus subtilissime denticulatis; collo pro genere parum elongato, retro dilatato, marginibus anterius convergentibus. Elytra et alæ subhyalina. Elytra 6^{m} segmentum abdominis tegentia, apice anguste rotundata, venis longitudinalibus basique venularum transversalium griseis vel fuscis. Alæ angustæ, venis subrectis; illis costæ et apicis ut in elytris griseo-inquinatis; vena ulnaris ultra medium furcata, ramis subarcuatis, postico apice breviter curvato. Coxæ anticæ prothoracis basin retro superantes, dentulis marginis antici nigris. Trochanteres intus macula ovata nigra. Femora sensim prothoracis longitudine, intus basi macula ovata nigra, ultra sulcum unguicularem infuscata; extus fusco-punctata. Tibiæ nonnunquam fusco-punctatæ, superne linea nigra; spinis sat validis apice nigro; basi dentulis 2. Pedes 2^{a}, 3^{a} nigro punctati. Lamina supra-analis carinata **V**-formis, apice rotundato; cerci longiusculi.

♀. Lobi elytrales et alares strigati, haud separati. Abdomen valde carinatum, segmentis 6°–9^{m} plus minus tumidis; 7°–9^{m} supra fere in dentem excurrentibus, 9° angulato; lamina supra-anali marginibus leviter arcuatis.

♀. Long. 32·5; pronot. 8·8; femor. ant. 7·3, lam. supra-anal. 2 millim.

♂. Long. 36; pronot. 8·8, femor. ant. 8·5, elytr. 23·5, latit. elytr. 5·3 millim.

Hab. NORTH AMERICA, Dallas in Texas (*Boll*).—NORTHERN MEXICO (*Mus. Genavense*).

Closely allied to *O. scudderi*, Sauss., which is a little more slender.

3. **Oligonyx striolatus,** sp. n. (Tab. IX. figg. 18–22.)

♂. Minor, fulvescens, fusco-irroratus; pedibus fusco-fasciatis, vel fere omnino fuscis. Vertex transversus, quam oculi parum altior, lobis juxta-ocularibus leviter prominentibus, juxta illos per sulcum distincte incisus. Prothorax parum elongatus, sparse granulatus; marginibus distincte denticulatis; ampliatione rhomboidali; collo mediocri; parte postica quam pars antica sesqui-longiore. Elytra et alæ elongata, hyalino-grisea, venis longitudinalibus brunneis. Elytra ad medium 5^{i} abdominis segmenti extensa, inter venas griseo-irrorata, venulis transversis hyalinis, ad exsertionem brunneis. Campus marginalis venulis omnibus brunneis, parum obliquis, basi per venam mediastinam in partes 2 æquales divisus. Alarum areæ 3 marginales venulis transversis brunneis instructæ. Coxæ anticæ retro basin prothoracis paulum superantes, granulatæ, margine superiore et anteriore distincte denticulato. Femora extus granulata, spinis crassiusculis, parum elongatis, nigris; margine interiore ante spinas toto distincte serrulato. Tibiæ spinis mediocribus armatæ; spina externa arcuata sed haud a basi ineurva; margine interno basi dentulis 3–4. Lamina supra-analis stylos vix superans, apice hebetato-rotundata, haud acuta.

Var. Elytra et campus anterior alarum venis longitudinalibus hic illic decoloribus (Dueñas, *Champion*).
Long. 31·5; pronot. 6·3, femor. ant. 6, elytr. 21·5, latit. elytr. 4·5 millim.

Hab. GUATEMALA, San Gerónimo, Dueñas (*Champion*).

In this species the wings are narrow, and the costa of the fore pair is but very little bent at the tip, and, consequently, the longitudinal veins are nearly straight, subparallel, and not so distant from each other as in *O. tessellatus* and *O. punctulatus*.

4. **Oligonyx punctulatus,** sp. n. (Tab. IX. figg. 23–25.)

♂. *O. striolato* affinissimus ac gracilior, pronoto et pedibus paulo angustioribus, lævigatis, haud granulatis. Fulvescens, pedibus brunneo-punctatis. Prothorax marginibus luteis, integris, in collo remote fusco-denticulatis, anterius granulis raris notatus. Elytra et alæ nebulosa, paulo latiora, apice obtusius rotundata, venis longitudinalibus interrupte fuscis, scilicet maculis elongatis fuscis, venulis transversis ad exsertionem haud infuscatis, in elytro decoloribus. Coxæ anticæ retro prothoracem superantes, margine anteriore integro, superiore vix crenulato. Femora margine inferiore interno longius inermi, vix crenulato. Tibiarum spinæ breviusculæ, externa haud arcuata; margine interno basi dentulis 1–2. Lamina supra-analis brevior, quando deplicata trigonalis, æqualiter lata ac longa, apice haud hebetato, a stylis superata.

Long. 28·5; pronot. 5·5, femor. ant. 5·2, elytr. 17·75, lat. elytr. 4·75 millim.

Hab. MEXICO, Dos Arroyos in Guerrero 1000 feet (*H. H. Smith*).

The veins of the elytra and of the apex of the hind wings are alternately brown and hyaline, that is to say, with short, brown spaces interrupted by hyaline segments; towards the tip the veins are dotted with brown. The wings of this species are shorter than in *O. striolatus* and *O. tessellatus*; the nervures are less arcuated than in *O. tessellatus*, but more than in *O. striolatus*.

5. **Oligonyx tessellatus,** sp. n. (Tab. IX. figg. 26–31.)

♂. Fulvescens, *O. striolato* simillimus; pronoto tamen breviore. Caput minus latum. Prothorax brevis, fere rhomboidalis; ejus pars postica quam pars antica vix longior, haud vel vix granulata; pars antica subgranulata, trigonalis, scilicet marginibus totis convergentibus, collo breviusculo, haud parallelo; marginibus vix denticulatis. Elytra et alæ grandia, abdomen superantia, nebulosa, fusco-punctulata, margine anteriore apice valde arcuato, venis discoidalibus itaque apice curvatis (plus quam in *O. punctulato*). Elytrorum venæ campi discoidalis elongato-fusco-tessellatæ, ut in specie laudata, et ad venas griseo-maculosæ; inter illas, saltem in dimidia parte apicali, griseo-punctulata; venulis transversis insuper ad exsertiones fuscis; venis media et ulnari magis obliquis; areis longitudinalibus disci propter hoc latioribus. Alarum pars apicalis fere eodem modo quam elytra tessellata. Pedes antici fusco-fasciati, paulo minus graciles ac breviores. Coxæ retro prothoracem superantes, margine antico remote denticulato, superiore subtilissime serrulato. Femora margine infero-interno basi tantum in tertia parte inermi, vix crenulato. Tibiæ spina exteriore subrecta, margine interno prope basin denticulis 2. Lamina supra-analis trigonalis, apice hebetata, a stylis superata.

Long. 24·5; pronot. 4·5, femor. ant. 4·8, elytr. 21·4, latit. elytr. 5·2 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

A remarkable species on account of the short prothorax and the large elytra and wings, the latter with more arcuated nervures than in the other representatives of the genus. The ulnar veins of the anterior wings are also more oblique, not reaching so far as in the allied species, and more distant from one another.

6. **Oligonyx toltecus,** sp. n.

♀. Fulvo-grisea, nigro-punctata, gracillima. Frons utrinque macula nigra; vertex subrectus, lobis lateralibus parum prominulis. Prothorax elongatus, gracilis, nigro-irroratus, sparse granulatus, marginibus tenuiter dense acute denticulatis. Pars posterior quam pars anterior fere duplo longior. Collum angustum, magna parte parallelum, retro dilatatum. Pedes antici gracillimi, fusco-fasciati vel maculosi et punctati; coxæ retro fere ad basin prothoracis attingentes. Tibiæ spinis validis armatæ, intus ante spinam primam dentulis 2 instructæ. Abdominis apex sensim ut in *O. mexicano*, lamina supra-anali tamen longiore, valde carinata.

Long. 43; pronot. 12·5, femor. ant. 9, lam. supra-anal. 3·2 millim.

Hab. Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

This insect is perhaps the female of *O. mexicanus* (?), the proportions of the coxæ and prothorax being about the same.

HARPAGONYX *, Sauss.

Harpagonyx, Saussure, Societas Entomologica, 1892, p. 122.

Caput parum latum; vertice valde compresso, acuto, bidentato; fronte plus minus planata, tricarinulata. Prothorax gracilis, modice longus, denticulatus, ampliatione tenui. Pedes antici graciles. Coxæ ultra medium subcompressæ, margine superiore sublamellari, ultra medium subcompresso, subsinuato, dehinc lamellari. Femora gracilia, in dimidia parte apicali spinosa; margine interno spinis 6–8 inæqualibus armato, ultima remota. Spinulæ subapicales obsoletæ. Spinæ discoidales 3 longiusculæ (prima deficiens). Tibiæ breves, teretes, subtus haud sulcatæ, spinis intus 3, quarum 2 primæ *a basi curvatæ, appressæ*, tertia elongata subrecta, ad superum dejecta, divergens. Lamina supra-analis elongato-trigonalis.

♂ ♂. Elytra et alæ illis generis *Olygonichis* conformia.

In this genus, as in *Thesprotia*, the armature of the anterior tibiæ is nearly reduced to the claw. The outer spines are rendered useless in a most extraordinary way by their curving back against the tibia. (Tab. VIII. fig. 4 *b*.)

In this very curious type the anterior tibiæ are armed, as in *Oligonyx*, with only four spines; but the two spines of the inner margin are curved against the tibia, with their points applied against its inferior face (comp. Tab. IX. fig. 21), so that they seem to be of no use for capturing prey. The single spine of the exterior margin is quite apical, it being placed under the point of insertion of the tarsus †; it is, however, sometimes obtuse or atrophied. The claw and upper spine appear to be the only weapons that can be used for grasping purposes.

It would be interesting to know how these insects capture their prey, and for what purpose the inner spines have their points recurved against the tibia, so as apparently to render them useless.

* ἅρπαξ, ferocious; ὄνυξ, claw.

† This spine is often difficult to detect: it is best seen by examining the tibia from its inner face and somewhat from below.

Synopsis specierum.

a. Alæ infuscatæ. Lamina supra-analis elongata, apice anguste producta.—1. *gryps,* sp. n.
aa. Alæ hyalino-griseæ.
b. Oculi ab antico superius attenuati. Lamina supra-analis trigonalis.—2. *dohrnianus,* sp. n.
bb. Oculi ab antico reniformes, superne haud attenuati.—3. *maya,* sp. n.

1. **Harpagonyx gryps,** sp. n. (Tab. VIII. figg. 4, 4 *a*, *b*.)

♂. Elongatus, gracillimus; corpore fusco, pedibus fulvo-griseis, fusco-punctatis et plus minus fasciatis vel irroratis. Caput sat parvum, nigrum, ore et area inter-antennali fulvis. Oculi tumidi elliptici, convergentes, superne haud attenuati. Facies infra ocellos cum fronte angulum fere rectum efficiens; scutellum faciale parallelum, margine superiore transverso, utrinque rotundato. Ocelli grandes, in tuberculos locati; anticus major. Frons parum elevata, transversa, paulum inæqualis, in medio et utrinque carinata; vertex subsinuatus; ejus dentes trigonales. Antemnæ piceæ, articulis 2 primis fulvis. Prothorax longiusculus, gracilis, marginibus fulvis, nigro-punctatis, subtilissime denticulatis; ampliatione tenui, parte posteriore quam pars anterior plus quam duplo longiore; collo angusto, parallelo. Elytra et alæ fusco-hyalina, iridescentia, angusta, venis fuscis. Elytra quam alæ paulo breviora, ad medium 4^{i} abdominis segmenti extensa, campo marginali ante medium leviter ampliato, venulis transversis campi discoidalis subhyalinis, ad exsertiones puncto fusco. Alarum campus anterior sat angustus, apice anguste rotundatus; sinu anali distincto, vena ulnari apice furcata. Coxæ anticæ retro prope basin prothoracis attingentes, margine superiore subtiliter crenulato, in medio leviter sinuato. Femorum spinæ nigræ apice rufo. Tibiæ breves, rectæ, spinis appressis; 2 marginis interni recurvis; unica marginis externi minuta, recta. Abdomen longissimum. Lamina supra-analis elongato-acute-trigonalis, stylos laminæ infra-genitalis vix superans, basi carinata, anguste acuminata. Cerci longi, compressi, graciles, 8-articulati.

Var.? Pronotum paulo brevius, granulatum; coxæ anteriores ad ejus basin attingentes.

Long. 41·5; pronot. 10·75, femor. ant. 7·5, alar. 23, elytr. 22, latit. elytr. 4·75 millim.

Hab. MEXICO, Jalapa (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*); GUATEMALA, Panima in Vera Paz (*Champion*).

2. **Harpagonyx dohrnianus,** sp. n.

♂. Gracillimus, fulvo-griseus, *H. gryphi* formis simillimus; capite tamen minus lato, oculis minus tumidis, superne attenuatis, ab antico piriformibus; vertice angustiore, magis arcuato-sinuato, dentibus paulo acutioribus. Elytra et alæ subhyalina, quam in specie laudata paulo latiora et obtusiora; elytris et campo anteriore alarum leviter fulvo-grisescentibus, venis fulvo-griseis, venulis transversis elytrorum magna parte basi incrassatis et clavatis. Pedes fusco-punctati; antici illis speciei laudatæ conformes. Lamina supra-analis brevior, trigonalis, æque lata ac longa, infragenitalem parum superans, a stylis valde superata; his longis, acutis.

♂. Long. 38; pronot. 9, femor. ant. 6·75, elytr. 20·5, alæ 21·5 millim.

Hab. GUATEMALA (*coll. Dohrn*).

3. **Harpagonyx maya,** sp. n.

Griseus, *H. dohrniano* simillimus at minor, differt: capite paulo latiore, ut in *H. gryphi*; oculis elliptico-tumidis, superne haud attenuatis. Vertice latiusculo; prothorace paulo breviore. Pedes et pronotum fusco-maculosa. Tibiæ anticæ subtus ante spinas subcrenulatæ, erecto-pilosellæ. (Lamina supra-analis elongata ut in *H. gryphi*?)

Long. —?; pronot. 7, femor. ant. 4·75, elytr. 15·5, alar. 16·25 millim.

Hab. MEXICO, Temax in Northern Yucatan (*Gaumer*).

SPANIONYX *, Sauss.

Oligonyx (ex parte), Saussure, Mém. Mex., Mantid. p. 117 (1870).
Spanionyx, Saussure, Societas Entomologica, 1892, p. 122.

Corpus elongatum, bacillare. Caput elevatum, oculis piriformibus, superne attenuatis; vel magis transversum, oculis ellipticis. Frons elevata, planata, supra ocellos carinula arcuata instructa; vertice compresso, bidentato. Prothorax sat elongatus, dense denticulatus, ampliatione tenui. Pedes antici gracillimi; coxæ margine superiore ultra medium sinuato, dehinc lamellari-compresso. Femora plus quam dimidia parte apicali spinosa, spinis omnibus parallelis, subperpendicularibus; in margine interno circ. 7, quarum 2ª, 4ª et ultima longis; ultima a præcedentibus remota. Spinulæ subapicales minimæ. Spinæ discoidales 3 longæ subæquales. Tibiæ illis generis *Olygonichis* sensim conformes. Lamina supra-analis elongata, lanceolata.

Synopsis specierum.

a. Caput æque altum ac latum, antice planissimum. Oculi superne attenuati, infere tumidi. Margo superior coxarum anticarum ultra medium sat fortiter dilatatus. Lamina supra-analis abdomen sensim superans.—1. *bicornis*, Sss.

aa. Caput latius quam altum. Oculi etsi supra convexi. Frontis sulcus arcuatus. Margo superior coxarum anticarum parum dilatatus. Lamina supra-analis abdomen vix vel haud superans.—2. *bidens*, sp. n.

1. **Spanionyx bicornis**, Sauss.

Oligonyx bicornis, Sauss. Mém. Mex., Mantid. p. 122. 3, ♀; Miss. Scient. Mex., Orthopt. p. 274. 2, t. 6. figg. 22, 22 *a*, *b*; Westw. Revis. Mantid. p. 5.

♀. Grisea, bacillaris. Caput parum latum, cum ore haud latius quam altum. Oculi piriformes, infere convexi, extus fere recti, ab antico superne acuminati. Facies tota plana; carinula frontali transversa, valde arcuata, subangulata, ab ocello antico et a vertice æque remota. Frons supra illam per sulcum longitudinalem divisa; sulcis juxta-ocularibus inferius vix divergentibus. Vertex transversus; ejus dentes anguste trigonales, conici, modice compressi. Prothorax minus angustus, rugosus, dense granulatus, nigro-irroratus, marginibus saltem anterius fortius denticulatis. Ampliatio supra-coxalis minime dilatata. Collum modice angustum. Pars postica pronoti quam pars antica plus quam duplo longior. Pedes antici valde fusco-punctati; coxæ retro fere ad basin prothoracis attingentes, margine superiore crassius denticulato, in parte apicali magis dilatato, in medio late subsinuato. Tibiæ spinis validis armatæ, margine interno subtus dentulis minimis 1–2 crenulato. Lamina supra-analis elongata, lanceolata, infra-genitalem tertia parte superans.

Long. 42; pronot. 12·25, femor. ant. 8, lam. supra-anal. 2·5 millim.

Hab. Mexico, Alvarado, Tehuantepec (*Saussure*), Atoyac in Vera Cruz (*Schumann*).

2. **Spanionyx bidens**, sp. n. (Tab. X. figg. 1–3.)

♀. Grisea. Caput latum. Oculi extus valde convexi, margine interno sinuato. Frons elevata, plana; ejus carinula supra-ocellaris obtusangulata, ab ocello infero quam a vertice magis remota, ab ocellis superis per depressionem arcuatam separata; frons supra illum per carinulam longitudinalem divisa. Vertex transverse leviter sinuatus; dentibus juxta-ocularibus trigonalibus. Prothorax elongatus, gracilis, leviusculus, sparse remote nigro-granulatus, marginibus dense subtilissime denticulatis. Ejus pars postica parte anteriore plus quam duplo longior, carina lutea. Ampliatio rhomboidalis parum lata. Collum angustum, elongatum, magna parte parallelum, quam ampliatio dimidio angustius. Pedes antici plus

* *σπάνιος*, few; *ὄνυξ*, claw. (The anterior tibiæ being armed with but few spines.)

minus fusco-fasciati. Coxæ retro basin prothoracis haud attingentes, basi et apice infuscatæ, extus granulatæ, lobo apicali marginis superi trigonali, margine superiore tenuiter dense denticulato, in parte apicali vix dilatato, ante illam ultra medium leviter sinuato. Tibiæ rectæ, spinis elongatis. Lamina supra-analis elongata, lanceolata, infra-genitalem superans.

Long. 50; pronot. 16·2, femor. ant. 10·5, lam. supra-anal. 2·8 millim.

Hab. HONDURAS, Ruatan I. (*Gaumer*).

A very distinct species, differing from *S. bicornis* (Sss.) in the more slender form, the much wider head (resembling in this respect the genus *Oligonyx*), the much larger eyes (convex up to the top), and the more slender and much more finely denticulate collar; the spines of the anterior tibiæ are also much longer, and the anterior coxæ do not reach to the base of the prothorax.

THRINACONYX *, Sauss.

Thrinaconyx, Saussure, Societas Entomologica, 1892, p. 122.

Corpus breve ac gracile. Caput transversum; fronte tuberculata; vertice compresso, transverso. Prothorax breviusculus, gracilis; ampliatione latiuscula; parte postica quam collum haud latiore. Elytra area costali lata, venis obliquis irregulariter reticulatis, area mediastino-discoidali angusta, quadrato-reticulata; vena mediastina elongata, campum marginalem per totam longitudinem dividente. Pedes antici gracillimi; coxis tamen basi incrassatis. Femora gracillima, ultra medium linearia; margine interno spinis circ. 7; basi spinis discoidalibus 4, tertia majuscula; apice spinula utrinque perspicua. Tibiæ gracillimæ, longiusculæ, teretes, *subdecurvæ*, ungue subrecto, minuto, apice fasciculato-spinosæ, scilicet spinis apicalibus dorsalibus arcuatis 2 instructæ, necnon intus spinis 2, extusque 1–2 insuper armatis. Lamina supra-analis trigonalis haud retro prominula. Cerci acuti.

Feminæ ignotæ (anne alatæ?).

♂ ♂. Elytra et alæ ampla, abdomen superantia. (Elytra alis breviora.) Alarum vena ulnaris furcata.

This is a well-marked genus, characterized by its short form, large wings, and very slender legs; and, principally, by the anterior tibiæ being curved upwards, their armature resembling that of *Thesprotia* and *Spanionyx* (comp. Tab. X. fig. 2). The terminal claw of the anterior tibiæ is small, straight, and spine-like. The inner margin (Tab. X. fig. 8) bears two spines beyond the middle, as long as the claw, and two of the other spines are transferred from the margin on to the dorsal face of the tibia and are scarcely less apical than the claw (the inner one shorter than the outer, this last corresponding to the dorsal spine of *Thesprotia* †). Altogether, there are five or six spines—five if there is only one, six if there are two, on the outer margin. In addition, the inner margin before the spines is finely crenulated and bears two or three small obsolete denticulations.

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* θρίναξ, fork; ὄνυξ, claw. (The anterior tibiæ with two spines or claws at the apex above.)

† The two dorsal spines are difficult to distinguish. They are best seen when the tibia is examined from above; in profile, only one is visible (the inner)—it looks like the claw, being as large and slightly more apical than the claw itself. The true claw, placed under the two dorsal spines, appears as a third spine of the inner margin.

Synopsis specierum.

a. Tibiæ anticæ extus spinis 2.—1. *fumosus*, sp. n.
aa. Tibiæ anticæ extus spina 1.—[2. *kirschianus*, sp. n.]

1. **Thrinaconyx fumosus,** sp. n. (Tab. X. figg. 4–10.)

♂. Fulvo-fuscescens vel brunneus. Caput sat minutum, valde transversum; oculis tumidis trigono oris minuto; fronte inequali, trituberculata, tuberculo medio majori, elliptico, ad verticem producto; lateralibus minutis, utrinque inter sulcos exsertis, a vertice remotis. Vertex compressus, transversus, oculos haud superans. Prothorax breviusculus, angustus, fulvo-fuscus, subverruculosus; ejus collum parallelum, quam pars postica angusta paulo brevius; ampliatione rhomboidali rotundata. Pars posterior quam pars anterior paulo longior, angusta quam collum haud latior, marginibus totis remote denticulatis. Elytra et alæ ampla, diaphano-fuliginosa, obtusa. Elytra paulo obscuriora, lata, venulis transversis obliquis, partim in medio hyalinis. Campus marginalis arcuatus, latiusculus; margine ad medium haud sinuato, apice necnon vena humerali et discoidali arcuatis. Alarum campus anterior apice venulis transversis hyalinis; vena ulnari ultra medium furcata. Campus posterior pallidior, vena axillari ultra medium furcata. Pedes antici gracillimi, pubescentes, rufidi, extus fusco-fasciati, coxis fascia postica infuscata. Coxæ retro prothoracem superantes, basi incrassatæ, margine antico subtilissime denticulato. Femora gracillima, fere dimidia parte apicali lineari, latere interno fusco, margine interno spinis 7 (2^a, 4^a, 5^a minutis, 6^a a 5^a valde remota; ultima, scilicet præapicali, brevi). Tibiæ breviter pilosæ, graciles, extus spina 1, intus 2; spinis apicalibus superis 2 brevioribus incurvis. Pedes postici et intermedii lutei, fusco-fasciati. Abdomen modice longum; lamina supra-analis trigonalis, æque longa ac lata, haud producta, plana. Cerci modice longi, acuminati. Lamina infra-genitalis supra-analem superans.

Long. 13·5; pronot. 3·7, femor. ant. 4, alar. 13·75, elytr. 13, latit. elytr. 4 millim.

Hab. Panama, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

A very distinct species. The superior part of the face bears three very rounded tubercles. The marginal field of the fore wings is not attenuated from the middle, but only in its apical part.

[2. **Thrinaconyx kirschianus,** sp. n. (Tab. X. fig. 11.)

♂. Gracillimus, fuscescens. Caput transversum, vertice valde compresso, acuto, quam oculi paulum altior, 4-sulcati. Oculi grandes, tumidi, inferius parum convergentes. Prothorax brevissimus, subfiliformis, subtiliter carinatus; marginibus tenuissime denticulatis; collo rugoso leviter granulato; ampliatione utrinque deflexa, angulis rotundatis. Elytra et alæ ampla, diaphano-fusca. Elytra quam alæ breviora. Alæ latæ, apice truncato-rotundatæ, campo antico posticum parum superante, sinu anali fere nullo. Venæ ulnares arcuatæ, antica ultra medium furcata. Pedes filiformes, modice longi, fusco-annulati. Coxæ anticæ basin versus incrassatæ. Femora subfiliformes, ultra medium sicut excisa ac filiformia, spina apicali nulla. Tibiæ partem filiformem femorum æquantes, apice leviter tumidæ, subito truncatæ, superne spinis 2 apicalibus longis arcuatisque, parum inæqualibus, armatæ; margine interno in dimidia parte apicali spinis 2 longis, gracilibus, acutissimis, ultima præcipue longissima, necnon inter illas spinula instructo; margine externo spina unica ad tarsum, armato. Tarsus fere longitudine femoris. Abdomen breve, gracillimum. Lamina supra-analis trigonalis, a lamina infra-genitali superata. Cerci breviusculi, moniliformes, 8–9-articulati. Styli inæquales.

Long. 19; pronot. 4·4, elytr. 15, latit. elytr. 5·5, alar. 16, femor. post. 4·5 millim.

Hab. Colombia (*Mus. Lugduni-Batavorum*).

This species differs from *T. fumosus* in having the two superior apical spines of the anterior tibiæ elongate.]

[BANTIA, Stål.

Bantia, Stål, Syst. Mantod. p. 44. 64 (1877).

Corpus ♀ apterum, crassiusculum. Caput transversum, fronte transverse carinulata. Pronotum brevissimum, crassiusculum, rhomboidale, ampliatione utrinque rotundato-dilatata, deflexa; marginibus omnibus denticulatis. Elytra et alæ in lateribus meso- et metanoti indicata, striata, sed haud retroproducta. Pedes parum longi; anteriores crassiusculi, breviusculi. Coxæ prismaticæ cantho interno distinctissime denticulato. Femora lata trigonalia, normalia, multispinosa, subtus spinis discoidalibus 4 (2^a, 3^a longioribus), necnon serie tuberculorum ante spinas instructa. Tibiæ graciles, compressæ; latere externo plano, superius carinato; ungue parum arcuato; marginibus spinis paucis armatis; interno spinis inæqualibus, ultima leviter ad superum rejecta; externi spina ultima longiuscula, acuta, divergente. Femora intermedia et postica minus gracilia quam in generibus reliquis; postica basi distincte incrassata. Abdomen angustissime fusiforme, carinatum, segmentis apice compressis, leviter in dentem productis, dente 2^i segmenti majore. Lamina supra-analis regulariter trigonalis. Cerci breviusculi.

♂ ♂. Graciliores. Elytra latiuscula, abdomen superantia, campo marginali basi paulum dilatato, apicem versus parum attenuato. Alarum vena ulnaris furcata (vel indivisa). Pedes postici longi, graciles.

This genus approaches *Thrinaconyx* in its general form, but the body is much less slender, though stouter than in *Miopteryx*. The armature of the anterior tibiæ somewhat resembles that of *Mionyx*, but the tibiæ themselves are not nearly so slender.

1. **Bantia marmorata,** sp. n.

♀. Ochracea, ubique nigro-punctata et irrorata. Caput nigrescens; ore et antennis flavidis. Scutellum faciale planum, margine supero transverse arcuato. Antennæ saltem basi rufescentes. Frons supra ocellos carinulam angulatam præbens, superne subtrigibbosum. Vertex sat rotundatus, quam oculi paulo altior, transversus, leviter undatus, utrinque lobo occipitali juxta-oculari rotundato, parum elevato. Occiput gibberosum. Prothorax crassus, sparse granulatus; collo brevi ac lato. Pedes antici breves, nigro-marmorati; coxæ rufæ, marginibus rectis, omnibus denticulatis, postico irregulariter serrulato, facie postica nigro-marmorata. Femora regulariter spinosa, intus spinis 8; spinis discoidalibus 2, 3 longioribus; facies infera inter spinas serie granulorum in dimidia parte basali instructa. Tibiæ superne compressæ, spinis extus 4 (ultima longa a basi unguis remota), basique denticulis 2; intus 4 (2^a a 1^a remota ac minor, 4^a elongata, subarcuata, ad unguem apposita); basi marginis nonnunquam denticulis minutis notata. Pedes 2^i, 3^i valde nigro-fasciati. Abdominis segmentum 2um supra apice dente majore. Lamina supra-analis apice hebetata.

Long. 14–15; pronot. 3·8, femor. ant. 4 millim.

Hab. BRAZIL, Rio Janeiro (*Mus. Genavense*).

2. **Bantia pygmæa,** Sauss.

Oligonyx pygmæa, Sauss. Miss. Scient. Mex., Orthopt. p. 274 (♂)*.

♂. Minutus, fuscescens. Caput compressum. Scutellum faciale minutum, margine supero subangulato. Vertex quam oculi paulo altior, utrinque sublobatus. Pronotum rhomboidale. Elytra et alæ abdomen valde superantia, subhyalina, venis griseo-ferrugineis. Elytra latiuscula vena media indivisa; venulis trans-

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* In the description read "inner margin" of the anterior tibiæ instead of "outer margin," and "outer margin" instead of "inner margin." Also:—the last internal spine inserted "between the 4th and the claw," instead of "between the 4th and the tibia."

versis subtilibus. Femora anteriora trigonalia; tibiæ spinis extus 4, intus 5, quarum 2ª minuta, 5ª ad superum dejecta, ungue apposita. Lamina supra-analis elongato-trigonalis.
Long. 12; pronot. 2·6, elytr. 12·5, femor. ant. 3·1 millim.

Hab. Brazil.

This is perhaps the male of *B. marmorata*; but the colouring of the body is different, and the lamina supra-analis is longer.]

Tribus HARPAGINÆ.

Harpagiens, Saussure, Mém. Mex., Mantid. pp. 7, 138; Mélang. Orthopt. i. 3ᵉ fasc. pp. 287, 440; ibid. ii. 4ᵉ fasc. p. 72.
Harpagidæ, Stål, Syst. Mant. pp. 7, 77; Brunner de W. Revis. Syst. Orthopt. pp. 59, 70.

Synopsis generum.

1. Oculi conoidei. Color mortuifolius.
   2. Elytra margine costali valde undato. Pronotum sat gracile. Femora anteriora extus spinis 6. Oculis apice mamillati.
      3. Vertex muticus.—Acanthops, S.
      3, 3. Vertex cornutus.—Pseudacanthops, Sss.
   2, 2. Elytra formæ consuetæ. Pronotum laminato-dilatatum. Femora anteriora extus spinis 4. Oculi haud mamillati.—[Epaphrodita, Serv.]

1, 1. Oculi rotundati. Vertex tuberculatus. Elytra margine costali recto, normali. Pronotum robustum. Femora anteriora supra ampliata.
   2. Pronoti ampliatio dilatata. Color mortuifolius.—Antemna, St.
   2, 2. Pronoti ampliatio haud lamellaris. Color prasinus.—Phyllomantis, Sss.

ACANTHOPS, Serv.

Acanthops, Serville, Rev. Orthopt. p. 25; Orthopt. p. 164; Burmeister, Handb. ii. p. 551; Saussure, Mém. Mex., Mantid. p. 139; Stål, Syst. Mant. p. 84; Westwood, Revis. Mantid. p. 24.

1. **Acanthops godmani**, sp. n. (Tab. VI. fig. 3.)

♂. Griseus. Caput superne latum, vertice vix acuto, transverso; pronotum sensim ut in *A. sinuata*, Stoll, leviusculum. Elytra margine anteriore ultra medium valde sinuato, dehinc fortius arcuato quam in specie laudata, apice rotundato, haud anguste producto; campus marginalis coriaceus ad basin venarum costalium fusco-maculatus; campus posterior submembranaceus, venis fuscis, dimidia parte postica membranacea, fumoso-marmorata, dimidia parte antica pallidiore, fusco-maculosa, parte apicali subcoriacea, apice fusciore. Alæ leviter hyalino-infuscatæ, apice subcoriaceo-fulvescente, fusco-irroratæ, margine posteriore obsolete nebuloso-marmoratæ. Margo costalis ante apicem valde arcuatus; campus anterior saltem magna parte sat regulariter venulosus, area discoidali anteriore transverse venulosa; alæ reliquæ venis leviter obliquis partim sigmoidalibus reticulatæ; campus posterior regulariter transverse venulosus. Abdomen segmentis nigro-marginatis, segmento 4° valde angulatim dilatato, 5° utrinque ad angulum anteriorem dentato. Cerci lobati, truncati. Lamina supra-analis rotundata. Pedes fusco-fasciati; coxæ anticæ supra luteo-maculosæ et granulosæ, subtus ubique luteo-granulosæ. Femora intus rufescentia, luteo-punctulata, margine superiore fusco, maculis marginis luteis.
Long. 33; pronot. 11, femor. ant. 9·25, elytr. 32·5, latit. elytr. 9·5 millim.

Hab. British Honduras, Belize (*Blancaneaux*).

Smaller than *A. sinuata* (Stoll), with the elytra and wings more transparent; the marginal field of the elytra narrower, and the apex not produced. The elytra are much more sinuated than in *A. tessellata*, wider and shorter, and not produced at the apex.

PSEUDACANTHOPS, Sauss.

Pseudacanthops, Saussure, Mém. Mex., Mantid. p. 178; Stål, Syst. Mant. p. 91; Westwood, Revis. Mantid. p. 24.

Paracanthops (olim), Sauss. Bull. Soc. Ent. Suisse, iii. p. 243 (1870); Mém. Mex., Mantid. p. 147; Miss. Scient. Mex., Orthopt. p. 279.

Femora antica spinis discoidalibus 4; spinis marginis externi 6 (spina apicali explicata). Tibiæ anticæ graciles, spinis numerosissimis armatæ.

1. **Pseudacanthops cælebs**, Sauss.

Pseudacanthops (*Paracanthops*) *cælebs*, Sauss. Bull. Soc. Ent. Suisse, iii. p. 243; Mém. Mex., Mantid. p. 148, t. 1. figg. 17, 17 *a* (♂); Stål, Syst. Mant. p. 91; Westw. Revis. Mantid. p. 24.

♂. Mortuifolius. granulatus; scutello faciali superne dentato; verticis processu brevi, apice truncato, quadridentato; pronoto anterius remote granulato, pone medium utrinque macula fusca; elytris et alis apice excisis et fusco-maculosis; illis stigmate fusco, his pallide brunneo-irroratis; femoribus anticis basi lobulo foliaceo instructis; tibiis anticis spinis 12 : 22; femoribus intermediis unilobatis.

Long. cum elytr. 56; pronot. 11·5, femor. ant. 10·6, elytr. 42, latit. elytr. 12 millim.

Hab. Mexico, Orizaba (*Saussure*).

ANTEMNA, Stål.

Antemna, Stål, Syst. Mant. pp. 83, 88 (1877); Westwood, Revis. Mantid. p. 22 (1889).

Vertex haud vel levissime protuberans, interdum in medio tuberculatus. Scutellum faciale circ. dimidio latius quam altum. Vertex tuberculatus. Pronoti ampliatio rhomboidali sat magna; pars postica anterius haud gibberosa. Pedes validi; antici compressi, lati. Femora posteriora lobata, spina geniculari armata. Abdomen ♀ fortiter ampliatum.

A genus closely allied to *Epaphrodita*, but with the hind femora more lobed and bearing a geniculate spine. The pupa only of *Antemna* is known.

1. **Antemna rapax**, Stål.

Antemna rapax, Stål, Syst. Mant. p. 88 (1877); Westw. Revis. Mantid. p. 22.

"Grisea, parte postica pronoti medio nigro-bimaculata. Clypeus frontalis (scutellum faciale) magnus, vix dimidio latior quam longus. Vertex disco tumidus et tuberculo acutiusculo anterius instructus; margines pronoti minute denticulati. Pedes antici compressi, lati; coxis in marginibus denticulatis, dentibus quibusdam nigris; femoribus extus granulis nonnullis nigris conspersis, superne fortiter compressis, ampliatis, parte apicali angustata, margine dorsali obtuse serrulato. Femora posteriora superne prope apicem lobo angulato, subtus lobis duobus, subapicali maximo, instructa. Tibiæ posteriores superne tectiformes." (Subimago.)

Long. 36; pronot. 14, latit. pronot. 2, long. femor. ant. 10·5 millim.

Hab. Panama, Chiriqui (*Stål*).

This species is unknown to us.

PHYLLOMANTIS, Sauss.

Phyllomantis, Saussure, Societas Entomologica, 1892, p. 124.

Corpus crassiusculum, color prasinus. Caput validum, trigonale, crassum, vertice leviter arcuatus, obliquus, anterius tuberculo obtuso armatus, utrinque sulco profundo arcuato, in occipite attenuato exarato. Facies planissima. Scutellum faciale sat altum, marginatum, superne truncatum; frons inter illum et tuberculum verticis late trigonalis, depressa. Ocelli minimi in lineam arcuatam exserti, invicem valde remoti. Antennæ tenuissimæ. Pronotum rhomboidale, ejus ampliatio late piriformis, quam pars basalis longior; hæc angustissima, carinata. Margines basi et apice exceptis remote minute denticulati. Elytra abdominis longitudine, latissima, apice sub-acuminata, campo marginali latissimo, stigmate discoidali angusto, calloso; area membranacea anali hyalina, regulariter reticulata. Alæ parum amplæ, vitreæ, acuminatæ, apice viridi-coriaceæ, margine anteriore apice valde arcuato. Pedes crassi, valde compressi, coxæ anteriores latæ, apice attenuatæ, margine postico leviter arcuato, marginibus denticulatis. Femora anteriora lata, margine superiore laminatim cristato, spinis validis armata, extus 4, margine inter illas verruculoso, apice valde lobato; margine interiore spinis circiter 16, alternatim minoribus ac majoribus, apice dente minuto armato. Spinæ discoidales 4 (tertia maxima). Tibiæ margine supero acuto, arcuato, intus sulcato. Femora intermedia et postica valida, lobata, superne carinata, spinula geniculari instructo. Metatarsus posticus reliquis articulis fere æquilongus. Abdomen latum, margine laterali posterius sublobato; lamina supra-analis transversa. Cerci longiusculi, deplanati.

Habitus generis *Hierodulæ* et *Cardiopteræ*, pronoto breviore.

1. **Phyllomantis laurifolia,** Sauss. (Tab. VI. figg. 6, 7.)

Phyllomantis laurifolia, Sauss. Societas Entomologica, 1892, p. 124.

♀. Prasina. Scutellum faciale planissimum, superne in medio subsinuato; frons rugulosa; tuberculum verticis brevissimum, obtusissime trigonale, haud hebetatum. Pronotum ante ampliationem utrinque subsinuatum, ejus pars angusta basalis quam pars ampliata duplo brevior; elytra campo marginali quam campus discoidalis latiore, margine antico maxime arcuato, venis irregulariter ramosis instructo ac irregulariter reticulato; vena discoidalis fere recta, tantum basi et apice paulum incurva. Stigma albidum, apice fusco terminato. Alæ margine anteriore thalassino; campus anterior margine apicali postico recto. Coxæ anticæ margine antico verrucoso-dentato, facie infera denticulato-granulata; femora crista recta, parte apicali fere recte excisa, obsolete denticulata. Spinæ apice nigræ, illæ marginis interni 2–3 ante ultimam minutæ. Tibiæ intus 14-, extus 12-spinosæ. Femora 2ª, 3ª subtus lobis 2, 1° parum alto, 2° majusculo, apice truncato, in posterioribus acuto; margo superior ante apicem lobulo parum prominulo instructo. Tibiæ posticæ superne rotundatæ.

Long. 59; pronot. 18, latit. ampliat. 8·5, long. femor. ant. 16, elytr. 33·5, latit. elytr. 19, camp. marg. 10·25 millim.

Hab. PANAMA, Bugaba (*Champion*).

Tribus VATINÆ.

Vatidæ, Stål, Syst. Mant. pp. 6, 67; Brunner de W. Révis. Syst. Orthopt. pp. 58, 73.

Some of the genera of this tribe, i. e. *Stagmatoptera*, *Vates*, and *Theoclytes*, comprise numerous closely allied species. As none of the authors have had representatives of all of them together at the same time, the species have been much confused. Consequently we have considered it advisable to give a general synopsis of the known species, including those here described*.

* For the synonymy, comp. Saussure, Mém. Mex, Mantid. pp. 84–96.

Synopsis generum.

1. Frons mutica. Antennæ ♀ ♂ setaceæ. Alæ ♀ plerumque interrupte flavo-coriaceo fasciculatæ. Tibiæ haud lobatæ. Color prasinus.—(Stirps *Stagmatoptera.*)
   2. Femora anteriora spinis discoidalibus 3, extus spinis 6. Femora 2ª, 3ª ♀ nonnunquam lobata, tibiis ♂ teretibus, pilosis. Elytra et alæ marium hyalina. Lamina supra-analis trigonalis.—CARDIOPTERA, B.

2, 2. Femora anteriora spinis discoidalibus 4, extus 4 armata. Tibiæ 2ª, 3ª subtiliter carinulatæ. Elytra ♀ ♂ prasina; alis flavo-tessellatis, vel ♂ hyalinis. Lamina supra-analis transversa.

   3. Elytra tota prasina vel macula stigmatica seu ocello colorato. Femora 2ª, 3ª haud vel vix lobata. Caput antice planum.
      4. Oculi rotundati. Elytra ♀ lata. Alæ ♀ (rare ♂) flavo-fasciatæ. Alæ apice obtusæ, vena ulnari ramosa.
         5. Elytra ♀ cordiformia, latissima, margine costali valde arcuato, apice retro arcuato; vel elliptica. Antennæ setaceæ.—STAGMATOPTERA, B.

5, 5. Elytra ♀ minus lata, apice transverso, margine costali apice subexciso. Antennæ ♂ serrulatæ.—PARASTAGMATOPTERA, Sss.

      4, 4. Oculi lateraliter acuti vel producti. Elytra parallela. Alæ vena ulnari furcata. Antennæ setaceæ.—[OXYOPS, Sss.]

   3, 3. Elytra fusco-maculosa. Femora 2ª, 3ª lobulo instructa. Caput antice excavatum, oculis ad anticum prominentibus.—[HETEROVATES *, Sss.]

1, 1. Frons bicornuta vel bituberculata. Alæ plerumque fuscæ, purpurescentes. Tibiæ 2æ, 3æ valde carinulatæ vel perfoliatæ. Elytra plerumque fusco-maculosa. Abdomen fuscum. Antennæ marium serratæ vel pinnatæ.—(Stirps *Vates.*)

2. Prothorax elongatus. Frons tantum tuberculis vel processibus 2 armata.
   3. Pedes lobati; femora anteriora apice lobo instructa. ♀ abdomen lobatum. ♂ antennæ graciles, setaceæ, serrulatæ. Elytra subacuminata, campo marginali ♀ angusto, parallelo, apice levissime exciso, saltem angustato.—[ZOOLEA, Serv.]

3, 3. Femora anteriora haud lobata. ♂ antennæ crassiores, serratæ.
   4. Pedes 2, 3 lobati. Frons bicornuta. ♀ abdomen lobatum vel integrum. ♂ antennæ intus pectinatæ. Elytra apice rotundato, campo marginali parallelo, apice plus minus exciso.—VATES, Burm.

4, 4. Pedes haud lobati, valde multicarinati. Frons cornuta vel bituberculata.
   5. Elytra ♀ apice acuminato, campo marginali parallelo vel apicem versus dilatato, apice plus minus fortiter exciso, saltem angustato. Elytra viridia, fusco-maculata. Prothorax elongatus, læviusculus vel parum granulatus. Abdomen haud lobatum. Pedes longiusculi; tibiæ posteriores curvati. Antennæ ♂ intus serratæ, submoniliformes.—THEOCLYTES, Serv.

5, 5. Elytra ♀ fulvo-grisea, maculosa, apice attenuato, rotundato, campo marginali angustissimo, apicem versus gradatim attenuato, nullo modo exciso. Prothorax elongatus, valde granulatus. Pedes breviusculi. Abdomen utrinque lobatum. (Mares ignoti.)—[HAGIOTATA, gen. n.]

2, 2. Prothorax brevis. Frons 4-cornuta.—[STENOPHYLLA, Westw.]

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* A very interesting Brazilian type, forming a transition from *Stagmatoptera* to *Vates.*

STAGMATOPTERA, Burm.

Stagmatoptera, Burmeister, Handb. Ent. ii. p. 537 (1839) (pars); Saussure, Mém. Mex., Mantid. p. 80; et auctores.

In the following synopsis the species in brackets do not belong, so far as yet known, to the Central-American fauna.

Obs.—*S. perpulchra*, Westw. [Rev. Mantid. p. 36, t. 11. fig. 8 (♀)], from Brazil, belongs to a different type, which approaches *Oxyops*. A new genus is required for its reception, which may be characterized as follows:—

Genus Pseudoxyops, n.—Oculi fere subacuminati. Elytra ♀ obtusissima, a basi ad $\frac{2}{3}$ longitudinem ampliata; campo marginali quam campus discoidalis latiore, venis costalibus distinctissimis, invicem remotis subtransversis. Alæ flavo-fasciculatæ, apice subangulato, subito viridi-coriaceæ; vena ulnari indivisa. Femora antica extus spinis 4.

S. pavonina, Burm., must also be excluded from *Stagmatoptera*. It is an African species of the tribe Harpaginæ, not yet identified with any certainty.

Synopsis specierum.

a. Lobi geniculares femorum posticorum rotundati. [Species Americanæ*.]
  b. Elytra macula discoidali rufo-fusca ornata. (Alæ ♀ flavo-fasciculatæ.)
    c. Elytrorum macula ocellaris, plus minus fusco-cincta, magna vel mediocris, orbicularis.
      d. Macula maxima, stigmate albo-calloso anteriore crasso. Pronoti margines tenuiter denticulati.
        e. Prothorax modice longus, ampliatione latiuscula, ovata, subelliptica. Macula elytrorum ♀ dimidiam latitudinem campi discoidalis æquans; stigmate albido, crasso, obliquo, arcuato; elytra pone ocellum spurcata. Alæ obtusæ, apice rotundatæ, remote flavo-fasciculatæ. Macula femorum rufa, grandis.—[*biocellata*, Sss.]
        ee. Prothorax gracilis, ampliatione ovato-piriformi. Macula elytrorum ♀ maxima, paulum retro-producta, altior quam lata, $\frac{3}{4}$ latitudinis campi discoidalis æquans; stigmate albido-calloso, recto, longitudinali, marginem anteriorem maculæ ad venam discoidalem marginante. Alæ acuminatæ, flavæ, margine posteriore flavo-fasciculato. Macula femorum obsoleta. Elytra ♂ tota hyalina excepto campus marginalis, lineolis 2 et puncto nigris remotis ad locum ocelli.—[*supplicaria*, B.]
      dd. Macula elytrorum minus grandis, arcu albido notata. Alæ ♀ omnino flavo-tessellatæ, ♂ fasciculis flavis paucis.
        e. Macula elytrorum distincte ocellaris.
          f. Statura minor. Prothorax breviusculus. Macula elytrorum distinctissime ocellaris, nigro-cincta; stigmate albido-calloso, obliquo, crasso, arcuato, annulum nigrum anterius tegente, intus marginante. Macula femorum

* The species not numbered and in brackets are all South-American.

nulla vel obsoleta. ♂ ocellus elytrorum major, nigro-cinctus, anterius et intus hyalinus.—[*hyaloptera*, Perty.]

ff. Statura magna. Prothorax elongatus, valde carinatus, crasse denticulatus, denticulis colli minoribus. Caput minutum, trigonale. Macula elytrorum fusco-rufa, regulariter orbicularis, arcu albido intra-marginali cum stigmate continuo. Femora antica gracilia, intus macula nigra. ♂ pronoto, ocello elytrorum et pedibus illis feminæ simillimis.—[*prædicatoria* *, Sss.]

ee. Elytrorum macula vix ocellaris, rufo-fusca, irregularis, anterius macula trigonali albido-callosa grandi.—1. ***septentrionalis***, sp. n.

cc. Elytrorum macula minuta vel mediocris, bicolor, antice linea albido-callosa, postice rufo-fusca, nec orbicularis nec ocellaris. Alæ ♀ omnino flavo-tessellatæ. Prothorax tenuiter denticulatus.

d. Macula sat magna, stigmate albido magno.

e. Elytrorum margo costalis totus arcuatus; macula discoidali irregulari. Prothorax elongatus. Macula femorum diffusa.—[1. *septentrionalis*, var.]

ee. Elytrorum margo costalis apice subsinuatus, oblique rectus; macula discoidali orbiculari, stigmate albido-piriformi. Prothorax modice longus. Macula femorum condite explicata.—[2. *pia*, sp. n.]

dd. Macula elytrorum sat parva. Caput paulo latius quam altum.

e. Femora antica modice crassa, macula interna nigra vel mediocri, ut solitum. ♂ alæ parce flavo-fasciculatæ.—[3. *annulata*, St.]

ee. Femora antica ♀ ♂ valida, macula interna grandi. ♂ alæ totæ hyalinæ.—[4. *femoralis*, sp. n.]

bb. Elytra stigmate lineari concolore vel albido, macula discoidali bicolore nulla.

c. Alæ flavo-fasciculatæ. Elytra tota prasina, acuminata.—[*sancta*, Stoll.]

cc. Alæ hyalinæ. Elytra fusco-varia, apice rotundata.—[*birivia*, Stoll.]

aa. Lobi geniculares femorum posticorum acuti. Alæ hyalinæ.—[Species Madagascarenses.]

b. Prothorax longissimus, gracilis. Elytra ♀ macula discoidali bicolore ornata, apice rotundata.—[*freyi*, Brancsik.]

bb. Prothorax brevior ac crassior, inermis. Elytra macula rufo-fusca nulla, ♀ apice acuta.—[*acutipennis*, Westw.]

1. **Stagmatoptera septentrionalis**, sp. n. (Tab. VIII. fig. 2.)

♀. Valida, prasina, *S. annulatæ* et *S. prædicatoriæ* affinissima; prothorace tamen longiore. Caput quam in speciebus laudatis angustius, regulariter trigonale. Pronotum coxis anticis duplo longius, magis carinatum, parte antica ut in speciebus laudatis piriformi; ejus margines fere tota longitudine tenuiter remote denticulati.—Elytra apice obtusa, rotundata ut in *S. annulata*, margine anteriore tamen toto arcuato, apice haud subsinuato. Campi discoidalis pars suturalis hyalino-fasciculata, ad campi analis apicem magis hyalina. Macula discoidalis sat grandis ut in *S. prædicatoria*, minor tamen quam in *S. biocellata* ac in *S. supplicaria*, fusco-rufa, irregulariter obsolete pallide cincta, anterius macula callosa alba trigonali vel ovata, macula baseos nigra; parte fusca maculam flavam basi et apice includente. Area analis flava, hyalino-maculosa.—Alæ vitreæ, fasciis flavis latiusculis ubique dense tessellatæ, apice viridi-coriaceæ.

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* Westwood, Revis. Mantid., Appendix, p. 36, t. 4. fig. 6, has figured a male with the denticules of the prothorax too small; nevertheless, his insect does not seem to be different from the species referred to.

Pedes antici mediocriter crassi sicut in *S. annulata*; coxis sat fortiter denticulatis; femorum macula interna obsoleta, rufescente, diffusa, margine infero nigro.

Long. 96; pronot. 38, elytr. 51, latit. elytr. 23, camp. marg. 8·3 millim.

Hab. PANAMA, Bugaba 800 to 1000 feet (*Champion*).

[Var. **minor,** n.

♀. Elytrorum margo costalis apice minus arcuatus, fere ut in *S. annulata*, qua de causa apex elytri minus obtusus. Macula discoidalis sensim minor, de reliquo illæ typi conformis. Area analis hyalina, flavo-fasciculata. Alæ minus dense flavo-tessellatæ. Femorum anteriorum spinæ ad maculam internam minus nigræ. Pronotum minus distincte carinatum.

Long. 79; pronot. 28·5, elytr. 42, latit. elytr. 17·6, camp. marg. 6·5 millim.

Hab. COLOMBIA; VENEZUELA (*Mus. Genavense*).]

This is the only known species having the prothorax twice as long as the anterior coxæ, *S. prædicatoria*, Sauss., excepted. It differs from the latter in having the pronotum finely denticulated, quite finely at its base; the macula of the elytra somewhat different, having a thick triangular white stigma without the white arch; and the macula of the femora almost obsolete. *S. septentrionalis* may be easily distinguished from *S. annulata*, Stoll, by its longer prothorax, its very much larger elytral macula, and its anterior femora without distinct marking. The head is somewhat narrower than in the other species of the genus, forming in the ♀ a regular triangle, its three sides being of equal length, as in *S. prædicatoria*, while in most of the other species the head is distinctly wider than high.

[2. **Stagmatoptera pia,** sp. n.

♀. Prasina, *S. annulatæ* simillima. Pronotum postice carinatum, marginibus tenuiter, parce denticulatis. Elytrorum margo costalis apice magis oblique truncatus, subsinuatus; macula discoidalis sat magna, quam in specie laudata duplo major, sed quam in *S. septentrionali* minor, rotundata, fusco-rufa, anterius macula callosa alba piriformi, posterius per fasciam angustam obsoletam rufam cum margine suturali conjuncta (fere sicut in *S. bioculata*); margo suturalis parce hyalino-punctatus; area analis prasina, parum hyalino-punctata. Femora anteriora macula consueta nigra vel virescente.

Long. 81; pronot. 32, elytr. 43, latit. elytr. 18·5, camp. marg. 7·25 millim.

Hab. BRAZIL (*Mus. Genavense*).]

[3. **Stagmatoptera annulata,** Stoll, Sauss.

Mantis annulata, Stoll, Spectr. et Mantes, t. 25. fig. 95 (♀), t. 18. fig. 66 (♂).

Var. ♂. Elytrorum campus discoidalis et analis vitreus, fascia prasina ad venam principalem ab ocello ad apicem præditus, inter ocellum et basin nulla.

Hab. BRAZIL, Pernambuco, Bahia (*Mus. Genavense*).

These males are perhaps a mere hyaline variety of *S. annulata*, or they may belong to some other species not yet characterized.]

[4. **Stagmatoptera femoralis,** sp. n.

? *Mantis præcaria,* Müller, Natursyst. Linn., Ins. i. p. 413, t. 9. fig. 3 (♀) (1774).

♀. Valida, prasina, *S. annulatæ*, St., affinissima. Pronotum paulo crassius, vix magis denticulatum.

Elytrorum macula ut in illa specie sat minuta, fusca, anterius linea callosa alba; area analis coriacea, maculis et margine postico hyalinis. Alæ omnino flavo-fasciatæ. Femora anteriora quam in reliquis speciebus paulo latiora, latere interno macula nigra maxima longiore quam alta, sulcum unguicularem includente, illum retro leviter superante.

♂. Elytra hyalina; campo marginali et vitta discoidali ad venam principalem viridi-coriacea. Alæ totæ hyalinæ, fasciculis flavis nullis, apice leviter virescentibus.

Var. ♂. Elytri stigma partim hyalinum, inter maculam fuscam et albidam linea hyalina.

♀. Long. 85; pronot. 36, elytr. 51·5, latit. elytr. 22, camp. marg. 8 millim.

♂. Long. 70; pronot. 25, elytr. 50, latit. elytr. 13, camp. marg. 3·75 millim.

Hab. GUIANA, Cayenne (*Prudhomme*, *Mus. Genavense*: 3 ♀, 3 ♂).

Easy to distinguish by the very large macula on the anterior femora.]

[PARASTAGMATOPTERA, Sauss.

Parastagmatoptera, Saussure, Mém. Mex., Mantid. p. 83 (1871); Stål, Syst. Mant. p. 68.

A genus composed of smaller species than *Stagmatoptera*; with the head not so regularly triangular, somewhat less high, the prothorax shorter, and the elytra without a coloured ocellus. In the males the elytra are hyaline, with the costal field more or less green, and the antennæ are distinctly serrulated.

A small larva from Costa Rica perhaps belongs to this genus, the known species of which are all South-American.

Synopsis specierum.

a. Femora posteriora haud lobata.

b. Elytra et alæ obtusiora. Campus marginalis elytri ♀ apice minus attenuatus, ♂ viridi-coriaceus. Campus discoidalis ♀ ultra medium maculis hyalinis numerosis.—[1. *unipunctata*, Burm.]

bb. Elytra et alæ angustiora. Campus marginalis elytrorum ♀ longius attenuatus, ♂ subhyalinus. Campus discoidalis ♀ maculis hyalinis paucis.—[2. *tessellata*, sp. n.]

aa. Femora posteriora apice subtus lobo minimo instructa. Pronoti ampliatio brevis, utrinque rotundata. Elytrorum campus anterior ♂ viridi-opacus.—[3. *lobipes*, Redt.]

1. **Parastagmatoptera unipunctata**, Burm.

Stagmatoptera unipunctata, Burm. Handb. ii. p. 540. 43.

Parastagmatoptera flavoguttata, Sauss. Mém. Mex., Mantid. p. 84, et auctt.

♀. Long. 42; pronot. 14·6, femor. ant. 10·4, elytr. 29·5, latit. elytr. 10, camp. marg. 3·75 millim.

♂. Long. 36·5; pronot. 13, femor. ant. 9·25, elytr. 28·25, latit. elytr. 7·75, camp. marg. 2 millim.

Hab. SOUTH AMERICA, Brazil, Argentine Republic.

2. **Parastagmatoptera tessellata**, sp. n.

♀. Prasina, *P. unipunctatæ*, Burm., simillima, at pronoto graciliore femoribusque anticis leviter crassioribus. Prothorax gracilis, coxis anticis sesquilongior, tota longitudine denticulatus. Elytra et alæ quam in specie laudata angustiora, apice sensim minus obtusa. Elytrorum campus marginalis in tota dimidia parte apicali attenuatus, stigmate fusco minimo, margine suturali anguste decolore; campo discoidali

punctis hyalinis paucis, ultra medium vix ullis. Alæ interrupte flavo-fasciculatæ, margine posteriore hyalino, basi breviter flavæ. Coxæ anteriores intus nigræ, basi prasinæ. Femora anteriora apice minus attenuata, margine infero-externo toto et ad apicem arcuato; intus basi nigra, spinis marginis interni alternatim nigris. Tarsi articulis 2°–5ᵐ nigris; antici tantum subtus nigri.

♂. Prothorax quam in specie laudata longior. Elytra et alæ hyalina. Campus marginalis elytrorum hyalinus, leviter virescens, haud opacus. Coxæ anticæ tantum apice nigræ.

♀. Long. 37·5; pronot. 14, elytr. 29, latit. elytr. 9, camp. marg. 3 millim.

♂. Long. 38; pronot. 14·75, elytr. 26, lat. elytr. 6·75, camp. marg. 1·3 millim.

Hab. Guiana, Cayenne (*Prudhomme*, *Mus. Genavense*).

3. **Parastagmatoptera lobipes,** Redt.

Parastagmatoptera lobipes, Redt. P. Z. S. 1892, p. 206, t. 15. figg. 8*a*, 8*b* (♂).

Hab. Antilles, St. Vincent.

A well-marked species with strong hind femora. In the form of its pronotum and of the small lobe of the hind femora it exactly resembles *Oxyops icterica*; but its serrulated antennæ places it in the genus *Parastagmatoptera*.]

[OXYOPS, Sauss.

Oxyops, Saussure, Bull. Soc. Ent. Suisse, iii. pp. 66, 231 (1869); Mém. Mex., Mantid. pp. 28, 41; Miss. Scient. Mex., Orthopt. p. 253; Stål, Syst. Mant. p. 68.

Caput quam in genere *Stagmatoptera* latius, minus altum, late trigonale; oculis lateraliter productis, acutis vel acuto-rotundatis; scutello faciali quam altum duplo latiore. Alarum vena ulnaris ♀ tantum furcata.

Synopsis specierum.

a. Major, oculis et alis acuminatis.—[1. *rubicunda,* St.]

aa. Minor, oculis et alis apice rotundatis.—[2. *icterica,* sp. n.]

1. **Oxyops rubicunda,** Stoll.

Mantis rubicunda, Stoll, Spectr. et Mantes, t. 25. fig. 96 (♀).

Oxyops rubicunda, Sauss. Mém. Mex., Mantid. p. 41. 1 (♀); Mélang. Orthopt. ii. 4ᵉ fasc. p. 33 (♂); Miss. Scient. Mex., Orthopt. p. 254 (♀ ♂); Stål, Syst. Mant. p. 71 (♀); Westw. Revis. Mantid. p. 15, t. 6. fig. 3 (♂).

Stagmatoptera diluta, Saussure, Mém. Mex., Mantid. p. 86, t. 1. fig. 6 (♂) (nec ♀).

Hab. Guiana, Cayenne; Brazil, Pernambuco.

Stål described three other species allied to *O. rubicunda*: *O. acutipennis*, *O. media*, and *O. obtusa*, all from South America. A small larva from Costa Rica perhaps belongs to one of these species; in any case it shows that either this genus or *Parastagmatoptera* extends into Central America. This larva has the eyes less acute than in *O. rubicunda*, but less rounded than in *O. icterica*. The anterior part of the pronotum is elongate-ovoid, as in *O. rubicunda*; but the pronotum itself is much shorter. The anterior tibiæ are unarmed at the base of their exterior margin, as in

O. rubicunda. The coxæ are granulated with black, and sprinkled with a number of black spots on their inner side. The hind femora are without lobe, as in *O. rubicunda.*

2. **Oxyops icterica,** sp. n.

♀. Prasina, sat minuta. Caput latum. Vertex quam oculi utrinque paulum altior. Oculi lateraliter producti, haud plane acuti, apice rotundati. Prothorax modice longus; parte postica gracili; collo angusto, parallelo, quam pars postica haud subtilius denticulato, ampliatione brevi, utrinque rotundata. Elytra abdominis longitudine, apice rotundata; campo marginali sat angusto, 3^{am} vel 4^{am} partem latitudinis elytri efficiens, omnino dense reticulato, venis obliquis nullis; disci stigmate transverso albido-calloso; campo anali et discoidali et ad apicem areolis hyalinis consperso. Alæ elytris leviter breviores, apice rotundatæ, opaco-flavæ, apice et margine postico late hyalinis, dense flavo-fasciculatis. Campus anterior posteriorem parum superans, incisura anali parum profunda. Coxæ anticæ intus apice longiuscule nigræ; femora spinis apice nigris, intus ad eorum basin alternatim tuberculo nigro. Tibiæ extus et ad basin spinosæ, spinis baseos minimis. Femorum posticorum carina infera apice lobo minimo.

Long. 32·5; pronot. 12·75, elytr. 17·5, latit. elytr. 6·5, camp. marg. 2·4 millim.

Hab. SOUTH AMERICA (*Mus. Genavense*).]

[ZOOLEA, Serv.

Zoolea, Serville, Orthopt. p. 154 (1839); Saussure, Bull. Soc. Ent. Suisse, iii. p. 53; Mém. Mex., Mantid. pp. 156, 160.

Vates (divisio B), Burmeister, Handb. ii. p. 544; Stål, Syst. Mant. p. 69.

1. **Zoolea macroptera,** Stoll.

Mantis macroptera, Stoll, Spectr. et Mantes, t. 8. fig. 30 (♀).

Zoolea lobipes, Serv. Orthopt. p. 154; Sauss. Mém. Mex., Mantid. p. 161.

Hab. GUIANA; BRAZIL.]

THEOCLYTES, Serv.

Theoclytes (ex parte), Serville, Orthopt. p. 153 (1839); Saussure, Bull. Soc. Ent. Suisse, iii. p. 60*; Mém. Mex., Mantid. pp. 156, 172; Miss. Scient. Mex., Orthopt. p. 292.

Vates (ex parte), Burmeister, Handb. ii. p. 543.

Pseudovates (divisio *aa*), Stål, Syst. Mant. p. 74.

Vertex bicornutus vel bidentatus. Prothorax elongatus. Pedes haud lobati. Pronotum elongatum.

♀. Elytra campo marginali apice exciso vel oblique attenuato. Campo discoidali fasciis obliquis 2, necnon maculis minutis fuscis. Alæ fuscæ, margine antico flavo, apice infuscato, margine exteriore pone apicem pallidiore.

♂. Elytra membranacea, vitrea, fusco maculosa; campo marginali viridi-opaco. Alæ vitreæ; margine antico virescente, apice fusco-punctato. Antennæ moniliformes, serratæ, vel intus subpectinatæ. Tibiæ posticæ incurvæ.

Synopsis specierum secundum feminas ordinatarum.

a. Frons bicornuta, cornibus depressis. ♀ elytrorum campus marginalis latiusculus, plus quam tertiam partem latitudinis elytri æquans; apice excisus, valde sinuatus; margo

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* ERRATUM.—Page 53, *l. c.*, the names *Pseudovates* and *Theoclytes* have been transposed.

suturalis apice valde arcuatus. Alarum campus anterior latiusculus, apice oblique truncatus; vena ulnari biramosa. Lobi geniculares femorum 2, 3 magis producti, acuminati.

b. Frontis cornua longiuscula, juxtaposita. Prothorax quam coxæ anticæ plus quam duplo longior, marginibus tenuiter denticulatis.—1. *chlorophæa*, Blanch.; 2. *maya*, sp. n.

bb. Frontis cornua brevissima, separata.—[3. *cingulata*, Drury.]

aa. Frons acute tuberculato-bidentata, dentibus invicem remotis.—♀ elytra angustiora, rotundato-acuminata, campo marginali tertiam partem latitudinis elytri haud superante, margine costali haud exciso, apice obliquo, vix sinuato; margine suturali apice parum arcuato. Alæ campo anteriore angustiore, posteriorem valde superante; vena ulnari sæpius unifurcata. Lobi geniculares femorum 2, 3 rotundati.

b. Alæ apice acuminatæ.

c. Pronotum subtilissime denticulatum. Elytra apice acuminata, margine costali apice sinuato, campo marginali ultra medium leviter dilatato.—[4. *stolli*, sp. n.]

cc. Pronotum crassiuscule denticulatum. Elytrorum campus marginalis angustior, ultra medium haud dilatatus, apice gradatim attenuatus, haud sinuatus.

d. Pronotum parum longum, minute denticulatum.—[5. *parallela*, de H.]

dd. Pronotum longissimum, fortissime spinulosum.—[6. *spinicollis*, sp. n.]

bb. Alæ apice rotundatæ. Elytra angusta. Pronotum sat longum, spinuloso-denticulatum.—[7. *iheringi*, sp. n.]

1. **Theoclytes chlorophæa**, Blanch.

Mantis chlorophæa, Blanch. Mag. Zool. 1835, t. 135 (♀); Serv. Orthopt. p. 153. 3 (♀).

Empusa chlorophea, Blanch. et Cast. Hist. des Ins. iii. p. 11. 5, t. 3. fig. 1 (♀).

Theoclytes chlorophæa, Sauss. Miss. Scient. Mex., Orthopt. p. 292. 1, t. 5. figg. 4 (♂); Mém. Mex., Mantid. p. 173. 1.

Theoclytes azteca, Sauss. Rev. et Mag. de Zool. 1859, p. 61 (♂).

Theoclytes mexicana, Sauss. Rev. et Mag. de Zool. 1861, p. 127 (♀).

♀. Frons cornibus longis contiguis armata; cornua spatium inter oculos sub antennas longitudine æquantia, quam latitudo verticis inter oculos breviora. Prothorax coxis anticis plus quam duplo longior, sed ejus pars postica illis haud duplo longior.

♂. Cornua frontis breviora, acutiora. Elytrorum campus marginalis tertia parte basali latiusculus, margine valde arcuato, dehinc angustus.

♀. Long. 73; pronot. 33, front. proc. 3·6, elytr. 41, latit. elytr. 15, camp. marg. 5·5 millim.

♂. Long. 57; pronot. 25, front. proc. 2, elytr. 50, latit. elytr. 10·5, camp. marg. 3 millim.

Var. **cornuta.**

♀. Major, frontis cornua longissima vertice inter oculos æquilonga, quam spatium inter oculos sub antennas longiora. Elytrorum apex ultra sinum longior, angustius, acuminatus. Prothoracis pars postica quam coxæ anticæ duplo longior. Alæ quam in typo apice paulo acutiores. Femorum posticorum lobi geniculares triangulares, subacuti.

Long. 81; pronot. 40, front. proc. 4·2, elytr. 45, latit. elytr. 15, camp. marg. 6·8 millim.

Hab. NORTH AMERICA.—MEXICO, Orizaba (*Saussure*), Jalapa (*Höge*); GUATEMALA (*Mus. Genavense*), Capetillo, Coban in Vera Paz (*Champion*), La Tinta (*Conradt*); COSTA RICA (*Biolley*, *Mus. Genavense*).

The length of the frontal horns and of the prothorax being somewhat variable in *Theoclytes*, as also the shape of the elytra, we believe that the large specimen described is only a variety of *T. chlorophœa*.

2. **Theoclytes maya,** sp. n. (*Theophytes chlorophœa*, var., Tab. X. fig. 33.)

T. chlorophœæ affinissima at minor, prothorace eodem modo elongato et gracili.

♀. Frontis processus longissimus deplanatus, apicem versus haud attenuatus, potius subdilatatus, inter cornua anguste incisus, cornibus apice late rotundatis. Prothorax sparse granulatus, marginibus remote minute denticulatis. Elytra et alæ sensim ut in *T. chlorophœa* vel paulo breviora; alarum vena discoidali tantum furcata.

♂. Antennæ serrato-moniliformes. Frontis processus valde brevior, apicem versus attenuatus, apice bidentatus. Prothorax elongatus. Elytra et alæ quam in maribus *T. chlorophœa* sensim breviora, campo marginali et apice latius prasino-coriaceis, punctis 2–3 fuscis. Alæ campo anteriore angustiore, apice anguste rotundato, ad margines inquinato, necnon puncto libero fusco; vena discoidali ramosa.

♀. Long. 58; pronot. 26, front. proc. 4, elytr. 30·5, latit. elytr. 10, camp. marg. 4·1 millim.

♂. Long. 57·5; pronot. 26, front. proc. 2, elytr. 34, latit. elytr. 8·5, camp. marg. 2·5 millim.

Hab. MEXICO, Tabasco (*H. H. Smith*: ♂), Temax in North Yucatan (*Gaumer*: ♀).

[3. **Theoclytes cingulata,** Drury.

Mantis cingulata, Drury, Illustr. ii. p. 89, t. 49. fig. 2 (♀) (1773).

Mantis bidens, de Haan, Bijdr. Kenn. Orthopt. p. 79. 43.

? *Mantis hyalina,* Fabr. Ent. Syst. ii. p. 21. 37 (♂) (syn. exclus.).

♀. Statura *T. chlorophœæ*. Frons cornibus brevibus haud contiguis armata. Prothorax elongatus, tenuiter denticulatus. Elytra campo marginali latiusculo, apice valde sinuato. Alæ apice haud acute productæ.

Hab. SOUTH AMERICA, Colombia, Guiana, North Brazil; ANTILLES, Cuba, Jamaica.

We only know this species by Drury's figure. All the authors, except de Haan, have confounded it with the insect figured by Stoll, Spectr. et Mantes, t. 9. fig. 32 (*T. stolli*). It forms a transition from the type of *T. chlorophœa* to that of *T. parallela*, the elytra being strongly sinuated at the end and the wings not pointed (as in *T. chlorophœa*), while the head is only bituberculated (as in *T. parallela* *).

Obs.—*T. cingulata*, Stoll, belongs to a different species (comp. *T. stolli*). Lichtenstein, Serville, Burmeister, Guérin-Méneville, Saussure, and Westwood have confounded the species of Drury and Stoll; the synonymy of these authors must therefore be completely excluded.]

[4. **Theoclytes stolli,** sp. n.

Mantis cingulata, Stoll, Spectr. et Mantes, t. 9. fig. 32 (♀) (1787); Serv. Orthopt. p. 197. 29 (♀);
? Oliv. Encycl. Méth. vii. p. 635. 49.

Theoclytes cingulata, Sauss. Mém. Mex., Mantid. p. 174. 2 (♀ ♂).

♀. Frons breviter bidentata. Prothorax valde elongatus, subtiliter denticulatus. Elytrorum campus mar-

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* Perhaps the insect figured by Drury really represents *T. chlorophœa*, completed by affixing to it the head of *T. parallela*?

ginalis ♀ latiusculus ultra medium leviter dilatatus, dehinc longe subsinuatus. Alæ acutæ (nonnunquam per monstrositatem apice rotundatæ).

Long. 67; pronot. 31·5, elytr. 39·5, latit. elytr. 12·75, camp. marg. 5 millim.

Hab. GUIANA; BRAZIL.

In this insect the marginal field of the elytra is somewhat wider and more sinuated at the end than in the following species; it occupies more than a third of the width of the elytra and is somewhat narrowed at the base. The form of the elytra is intermediate between that of *T. chlorophæa* and *T. parallela* or *T. spinicollis.*]

[5. **Theoclytes parallela,** de Haan.

Mantis parallela, de Haan, Bijdr. Kenn. Orthopt. p. 79. 42 (♀ ♂).

Theoclytes parallela, Sauss. Mém. Mex., Mantid. p. 176. 3, t. 2. fig. 33; Miss. Scient. Mex., Orthopt. p. 294. 3.

Theoclytes surinamensis, Sauss. Bull. Soc. Ent. Suisse, iii. p. 60 (♀) (1869); Mém. Mex., Mantid. t. 1. fig. 19.

T. spinicolli haud dissimilis. Differt tamen prothorace breviore, ampliatione paulo latiore, marginibus omnibus multo minus fortiter denticulatis (in modo *T. iheringi*); ♀ alarum campo anteriore paulo latiore, parce fusco-notulato, margine antico apice magis arcuato, margine apicali oblique recto.

Long. 63; pronot. 27, elytr. 42·5, latit. elytr. 13, camp. marg. 4·5 millim.

Hab. GUIANA (*Mus. Genavense*).]

[6. **Theoclytes spinicollis,** sp. n. (Tab. VI. fig. 2.)

♀. Prasina. Verticis cornua brevissima, acute trigonalia. Prothorax elongatus, quam coxæ anticæ duplo longior, marginibus longe fortissime spinosis; spinis parte postica basi valde dilatatis, irregularibus, minoribus intercalatis. Elytra hebetato-acuminata, margine costali apice vix sinuato; discus maculis tribus obliquis fuscis, tertia minore, necnon dimidia parte suturali fusco-punctata; area anali fusca. Alæ fuscæ, acuminatæ (ut in *T. cingulata*), campo marginali viridi, apice fusco-inquinato. Margo externus de reliquo subhyalinus; venulis transversis, hyalinis. Coxæ anticæ margine antico remote spinoso, externo vel postico nigro-granulato; facie postica sparse granulata, externa fusco-punctata, interna apice macula quadrata nigra; margine postico apice dente minuto. Abdomen ut solitum supra testaceum, segmentorum marginibus nigris.

Long. 67; pronot. 32, elytr. 40, latit. elytr. 12, camp. marg. 3·6 millim.

Hab. BRAZIL (*Mus. Genavense*).]

[7. **Theoclytes iheringi,** sp. n.

♀. Fusca vel virescens. Caput sat minutum, fronte tuberculis acutis 2; scutello faciali margine supero arcuato, prominulo, haud angulato. Prothorax modice longus, tota longitudine spinulosus ac denticulatus; spinis numerosis, minoribus quam in *T. spinicolli.* Elytra valde angusta, apice attenuata, macula basali, fascia ante medium, macula minuta ante apicem punctisque numerosis, fuscis. Campus marginalis angustus, apice complete attenuatus, de reliquo subparallelus, quam in *T. parallela* angustior. Apex elytri anguste rotundatus. Area membranacea analis tota nigra. Alæ totæ fuscæ, margine externo pallido. Campus anterior angustissimus, vena ulnari tamen furcata, in venis remote fusco-punctatus, costa virescente; apice campum posticum sensim superante (ut in *T. parallela*), infuscato, haud acuminato, margine anteriore recto, exteriore leviter arcuato. Campus posterior ad apicem fusco-punctatus. Pedes

antici graciles. Coxæ intus apice nigræ, margine antico dentibus nigris 4–5 majoribus, inter illos denticulis minoribus 2–3. Femora fusco-fasciata. Tibiæ graciles, spinis 16 : 12.

Long. 68 ; pronot. 29, elytr. 42, latit. elytr. 10, camp. marg. 3·2 millim.

Hab. BRAZIL, Rio Grande do Sul (*Ihering*).]

VATES, Burm.

Vates (ex parte), Burmeister, Handb. ii. p. 543 (1839) ; Saussure, Mém. Mex., Mantid. pp. 156, 162 ; Miss. Scient. Mex., Orthopt. p. 291.

Theoclytes (ex parte), Serville, Orthopt. p. 151 ; Stål, Syst. Mantid. pp. 69, 73.

Pseudovates (divisio *a*), Stål, Syst. Mant. p. 74.

We regret that Stål has applied the name *Vates* to the genus *Zoolea*, Serv. ; this interpretation causes great confusion in the synonymy of the species. The first *Vates* described by Burmeister is *V. cnemidotus* (=*subfoliata*, Stoll), so that the name *Vates* of Burmeister must be reserved for this type ; while *Zoolea* must certainly be retained for the genus of Serville. In this way all confusion is avoided.

Synopsis specierum.

1. *Feminæ* :

a. Elytra latiora, campo marginali apice complete exciso. Alæ infuscatæ.—PSEUDOVATES, Sss. *

b. Campus marginalis elytrorum latus, rotundato-excisus. Processus frontis brevis. Tibiæ late foliatæ. Abdomen sublobatum.—1. *tolteca*, Sss.

bb. Campus marginalis elytrorum angustus, apice oblique excisus. Processus frontis longus. Tibiæ posticæ anguste lobatæ. Abdomen haud lobatum.—2. *paraensis*, Sss.—3. *longicollis*, St.

aa. Elytra angustiora, campo marginali angusto, haud exciso. Alæ vitreæ. Lobi geniculares femorum haud acute producti vel rotundati. Abdomen haud lobatum.—VATES, B.

b. Femora 2, 3 apice bifoliata.—4. *pectinata*, Sss.

bb. Femora 2, 3 apice unifoliata.—[5. *subfoliata*, St.]

2. *Mares* :

a. Femora et tibiæ 2, 3 valde lobata, lobis trigonalibus.

b. Femora posteriora apice bilobata, prope basin frequenter unilobata. Antennæ pinnatæ.—4. *pectinata*, Sss.

bb. Femora posteriora apice unilobata.—[5. *subfoliata*, St.].—6. *pectinicornis*, St.—[7. *amazonica*, W.]

aa. Femora et tibiæ posteriora sublobata, lobis rotundatis parum dilatatis. Antennæ serratæ. Elytra subcoriacea.—2. *paraensis*, Sss.

1. **Vates tolteca**, Sauss.

Vates tolteca, Sauss. Mém. Mex., Mantid. p. 167. 4 (♀) ; Miss. Scient. Mex., Orthopt. p. 291. 1, t. 5. fig. 3 (♀).

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* *Pseudovates*, Sauss. Bull. Soc. Ent. Suisse, iii. p. 60 (p. 53, *Theoclytes*, per erratum, cp. suprà p. 190, note) ; Stål, Syst. Mant. p. 74 (divisio *a*).

♀. Prasina. Frontis processus brevis, bicornutus. Prothorax mediocris, lobis supra-coxalibus rotundatis, latiusculis, marginibus densiuscule minute denticulatis. Elytra latiuscula, fusco-maculosa, campo marginali lato, apice valde exciso; area anali partim infuscata. Alæ diaphano-fuscæ, venulis pallidis, parte apicali pallidiore; campo marginali virescente; apice anterius coriaceo-fusco. Campus anterior latiusculus, oblique truncatus. Femora et tibiæ lobata; lobis longiusculis rotundatis.

Long. 62; front. proc. 1·5, pronot. 23·5, elytr. 44, latit. elytr. 14, camp. marg. 5·5 millim.

Hab. Mexico, Cordova (*Saussure*), Jalapa (*Höge*).

2. **Vates paraensis,** Sauss. (Tab. VI. fig. 1; Tab. X. figg. 28, 29.)

Vates paraensis, Saussure, Mém. Mex., Mantid. p. 168. 5 (♀).

♀. Gracilis, prasina; pedibus fusco-fasciatis. Caput modice latum, scutello faciali superne in medio in processum rotundato-productum. Frontis processus maximus, deplanatus, bicornutus, occipitis latitudine æquilongo, cornibus apice rotundatis. Prothorax elongatus, gracilis, remote denticulatus; ejus ampliatio parum lata, lobis rotundatis, collo parallelo. Elytra sat angusta, prasina, fusco-maculata, campo marginali sat angusto, tertia parte apicali oblique exciso; area anali magna parte fusca. Alæ fuscæ, venulis luteis, margine exteriore pallido; apice infuscato. Campus marginalis virescens. Campus anterior modice latus, apice rotundato-truncatus, campum posticum superans et ab illo per incisuram distinctam separatus. Pedes 2us, 3us elevato-carinati. Femorum lobi geniculares acute producti; lobi foliacei humiles, rotundati, apice 3, anterius 2, postice 1; carina supero-postica basi leviter dilatata, saltem in intermediis. Tibiæ ante medium superne lobo rotundato utrinque, et carinis utrinque fere usque ad basin dilatatis. Abdomen ut solitum flavidum, transverse nigro-fasciatum vel totum nigrum.

♂. Antennæ serrato-moniliformes, haud pectinatæ. Frontis cornua breviora, apice acuta, inter se apice trigonali incisa. Prothorax marginibus remote denticulatis ut in femina. Elytra viridi-semicoriacea, campo marginali coriaceo, basi sensim dilatato (plus quam in *V. pectinata*); margine costali ultra medium subsinuato; margine suturali submembranaceo. Campus discoidalis punctis nonnullis fuscis, ac fusco-trimaculatus, macula majore ante medium, macula minore prope basin et ante apicem notatus, fere ut in feminis. Alæ vitreæ; margine costali et apice viridi-subcoriaceis; campo discoidali prope apicem maculis vel punctis nonnullis fuscis, apiceque anguste fusco-limbato; vena discoidali biramosa. Pedes fusco-fasciati, eodem modo quam in feminis lobati.

♀. Long. 78; pronot. 29·5, front. proc. 4·75, elytr. 45, latit. elytr. 11·5, camp. marg. 3·75 millim.

♂. Long. 66; pronot. 25, front. proc. 3, elytr. 48, latit. elytr. 11, camp. marg. 3·75 millim.

Hab. Mexico, Guadalajara in Jalisco (*Schumann*: ♀), Cuernavaca in Morelos (*H. H. Smith*: ♂).—Amazons, Pará (*Mus. Genavense*).

This species is the only one as yet known in *Vates* and the allied genera in which the male has the elytra rather opaque and coloured as in the females.

We are unable to find any difference between the Mexican specimens and the typical *V. paraensis*, except that they are larger and have the legs more strongly lobed. Saussure only knew *V. paraensis* from a rather bad specimen, with the frontal horns broken.

This species is allied to *V. longicollis*, Stål (Syst. Mant. p. 74. 1; incompletely described), which, however, has a lobed abdomen, and, apparently, a longer prothorax.

3. **Vates longicollis,** Stål.

Pseudovates longicollis, Stål, Syst. Mant. p. 74. 1.

♀. *Vati toltecæ* maxime affinis, processu capitis autem multo longiore; prothorace femoribus anticis fere duplo

longiore. Segmenta ventralia lateribus lobatis. Pronoti collum parallelum. Pedes posteriores lobati; femorum lobi geniculares acuminati.

Long. 68; front. proc. 3·3, pronotum 29·5, femor. ant. 15·5 millim.

Hab. MEXICO (*coll. Brunner*).

4. **Vates pectinata,** Sauss. (Tab. VI. figg. 4, 5; Tab. X. figg. 30–32.)

Vates pectinata, Sauss. Mém. Mex., Mantid. p. 163. 1, t. 1. fig. 34 (♂) (1871).

Prasina. Frontis processus mediocris, bicornutus. Prothorax modice longus, gracilis, marginibus minute remote dentatis; ampliatione latiuscula utrinque rotundato-lobata vel anterius subsinuata; collo mediocri, antrorsum attenuato. Pedes graciles, fusco-fasciati. Femora 2ª, 3ª apice utrinque foliata, folia antica minuta; intermedia insuper prope basin postice folia subquadrata instructa. Tibiæ in medio utrinque foliatæ et ad apicem subtus lobo elongato rotundato parum lato instructæ.

♀. Elytra angusta, apice subattenuata, parabolice rotundata, tota prasina, maculis nullis; campo marginali angustissimo, haud exciso, opaco-viridi; area anali thalassina. Alæ hyalinæ, costa et venis virescentibus, apice coriaceo-brunneæ (vel prasinæ?). Campus anterior angustus, posteriorem satis superans, acuminato-rotundatus; vena ulnari biramosa.

♂. Elytra et alæ longiuscula, vitrea, venis prasinis, apice anguste rotundata, quam in ♀ obtusiora. Elytra campo marginali angusto, opaco-viridi. Alæ apice virescentes vel brunnescentes. Antennæ intus pectinatæ, extus serratæ.

♀. Long. 53·5; pronot. 21·5, front. proc. 2, elytr. 40, latit. elytr. 9·5, camp. marg. 3 millim.

♂. Long. 53; pronot. 20·5, front. proc. 1·75, elytr. 42, latit. elytr. 9, camp. marg. 2·25 millim.

Hab. MEXICO (*Coll. Guérin, in Mus. Genavense*: ♂), Atoyac in Vera Cruz (♂), Teapa in Tabasco (♀) (*H. H. Smith*).

The anterior part of the prothorax is much like that of *V. tolteca*, Sauss., the collar being short, and the coxal lobes rounded and prominent, but still more so than in *V. tolteca.*

This species is very closely allied to *V. subfoliata*, Stoll, which has similarly shaped wings. But in *V. subfoliata* the anterior part of the pronotum is less dilated, the femora have no lobe on the superior margin, and the lobes of the tibiæ are elongated and rounded (in *V. pectinata* the lobes are all truncate or emarginate on their apical margin, and, therefore, angular or acute). In *V. subfoliata* (♂) the frontal process is acute, while in *V. pectinata* it is divided into two horns which have separate points. (Comp. infra, sub *V. subfoliata.*)

[5. **Vates subfoliata,** Stoll.

Mantis subfoliata, Stoll, Spectr. et Mant. t. 18. fig. 67 (♀) (1787).

Vates subfoliata, Sauss. Mém. Mex., Mantid. p. 166. 3 (♀).

Mantis sphingicornis, Stoll, Spectr. et Mant. t. 20. fig. 74 (♂).

Vates sphingicornis, Sauss. Mém. Mex., Mantid. p. 164. 2 (♂).

Vates cnemidotus, Burm. Handb. ii. p. 543. 1 (♀).

♀. *V. pectinata* paulo minor; frontis cornibus styliformibus, a basi ad apicem attenuatis; simul sumtis processum lanceolatum efficientibus. Pronoti ampliatio parum dilatata, fere ut in genere *Theoclyti.* Pronoti margines ut in *V. pectinata* denticulati. Elytra et alæ illis *V. pectinatæ* similia. Femora intermedia et postica lobum unicum posticum gerentia; tibiæ lobos 2 elongato-rotundatos minus latos, haud acute truncatos gerentes, apice haud sublobatæ.

♂. Elytris et alis hyalinis, apice virescentibus, rotundatis; illis campo marginali coriaceo-viridi. (Secundum figuram Stolli.)

♀. Long. 54; pronot. 23, front. proc. 1·5, elytr. 36·5, latit. elytr. circa 9, camp. marg. 2·5 millim.

Hab. GUIANA (*Mus. Genavense*: ♀).]

6. **Vates pectinicornis,** Stål.

Theoclytes pectinicornis, Stål, Syst. Mant. p. 73. 2 (♂).

Pseudovates pectinicornis, Westw. Revis. Mant. p. 25.

♂. *V. subfoliatæ* ♂ "maxime affinis; differt femoribus posterioribus prope apicem in carina dorsali interiore lobo minus elevato, in femoribus posticis posterius angulato, præditis, limboque costali alarum in parte vix dimidia posteriore obscure fusca."

Long. 47; pronot. 19, front. proc. 1·5, femor. ant. 10 millim.

Hab. PANAMA, Chiriqui (*Stål, Mus. Holm.*).

[7. **Vates amazonica,** Westw.

Theoclytes amazonicus, Westw. Revis. Mantid., Append. p. 46 (♂).

"Close to *V. subfoliata*, St., but the 2nd and 3rd tibiæ bearing only a small obsolete foliaceous lobe."

Hab. AMAZONS (*Mus. Hopeianum*).]

[HAGIOTATA*, gen. nov.

Frons bituberculata. Prothorax sat brevis, valde granulatus. Elytra apice attenuata, rotundata, campo marginali angustissimo, apice haud exciso. Pedes sat breves. Abdominis 4um segmentum lobatum.

1. **Hagiotata hofmanni,** sp. n. (Tab. VIII. fig. 5.)

Fulvo-rufescens. Frons bidentata. Scutellum faciale transversum, superne obtusangulatum. Vertex quam oculi sensim altior. Prothorax quam in genere *Theoclyti* valde brevior, supra ubique fortiter sparse granulatus, marginibus remote sat fortiter dentatis, dentibus minoribus intercalatis; carina dorsali tota longitudine, collo biseriatim remote, denticulatis; hoc ad basin tuberculis fortioribus 2. Elytra fulvo-grisea, angusta, apicem versus valde attenuata, apice rotundata; campo marginali angustissimo, prope basin leviter ampliato, apice nullo modo exciso; margine suturali subhyalino; area membranacea anali fusca; superficie tota fusco-punctata, ante medium fasciis 2 incompletis, ultra medium maculis fuscis conspersa; margine costali serie punctorum fuscorum ornato. Alæ pellucenti-fuscæ; campo antico angusto, apice arcuato-truncato, campum posticum parum superans. Campus anterior ubique sparse fusco-maculosus, apice densius; campus posterior in parte anteriore, saltem extus, sparsius fusco-conspersus. Pedes sat breves, fusco-fasciati. Coxæ anteriores intus apice nigræ, extus remote granulosæ; marginibus granulatis, margine antico-supero dentibus trigonalibus 4–5 nigris, minoribusque paucis intercalatis fulvis. Tibiæ graciles. Abdomen nigro-fasciatum, 4° segmento utrinque scrobiculato-lobato.

Long. 52; pronot. 21, elytr. 37, latit. elytr. 9, camp. marg. 2 millim.

Hab. BRAZIL.]

* ἅγιος, holy, saint; ἁγιώτατος, most holy.

Fam. GRYLLIDÆ *.

The members of this family resemble the Locustidæ in their saltatorial habits, and also in being furnished with an ovipositor †; they have long setaceous antennæ, and a musical apparatus on the elytra. The Gryllidæ form, however, a very distinct family, differentiated from the Locustidæ by the following characters:—

1. The tarsi are only 3-jointed.

2. The elytra in repose lay flat on the body; their discoidal field is united to the anal field, so as to form a single *dorsal* plane, and not well separated from each other; their marginal field alone being deflexed perpendicularly downwards, covering the sides of the body.

3. The tympanum or musical organ of the elytra extends on to the discoidal as well as the anal field, and often covers it almost entirely.

In the Locustidæ the tarsi are 4-jointed; the discoidal field of the elytra is joined on a single plane with the marginal field, and occupies a lateral, somewhat perpendicular, position, the anal field alone remaining in the dorsal plane: the musical organ of the males is thus confined to the anal field.

The family Gryllidæ having already been monographed ‡, it is unnecessary to repeat here the synopses of genera, or to give detailed descriptions of them.

The Gryllidæ may be divided into six tribes as follows:—

Synopsis tribuum.

1. Tarsi compressi, secundo articulo compresso, minuto.
   2. Pedes antici fossores; tibiis anticis apice digitis 2–4 instructis. Pronotum elongatum, ovatum, postice arcuatum. Feminæ absque ovipositore; marium elytrorum tympanus, quando adest, absque speculo.—Gryllotalpinæ.

2, 2. Pedes antici gressores. Feminarum ovipositor perspicuus elongatus (vel rudimentarius). Marium elytrorum tympanus, quando adest, speculo minuto instructo (nisi abortivo).
   3. Tibiæ posticæ biseriatim spinosæ. Ovipositor rectus.
      4. Antennæ breves, subfiliformes, crassiusculæ. Scutellum faciale inter antennas exsertum. Tibiæ posticæ dilatatæ.—Myrmecophilinæ.

   4, 4. Antennæ longæ, setaceæ. Scutellum faciale transversum, infra antennas perspicuum. Tibiæ graciles.

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* By Dr. Henri de Saussure.

Principal works referred to for this family:—

H. de Saussure, 'Mission Scientifique au Mexique etc.,' Orthoptères. (*Vide suprà*, p. 13.)

H. de Saussure, 'Mélanges Orthoptérologiques,' t. ii. fasc. 5 (1877) and 6 (1878).

† The Gryllotalpinæ form an exception, being adapted to a subterranean life, which renders an ovipositor useless.

‡ By Dr. Henri de Saussure.

5. Tibiæ posticæ, spinis validis armatæ, inter spinas haud serratæ.—GRYLLINÆ.—(Gen. *Acanthoplistus.*)

5, 5. Tibiæ posticæ graciles, spinis gracilibus armatæ, inter spinasque serrulatæ.—ŒCANTHINÆ.

1, 1. Tarsorum secundus articulus depressus, cordiformis.

2. Tibiæ posticæ haud serratæ, biseriatim spinosæ.

3. Spinis utrinque 3 mobilibus; calcaribus apicalibus in latere interno tantum 2. Ovipositor brevis, incurvus.—TRIGONIDINÆ.

3, 3. Spinis numerosis infixis. Ovipositor elongatus, rectus.—Gen. *Stenogryllus.*

2, 2. Tibiæ posticæ utrinque serratæ ac spinosæ; calcaribus apicalibus ut solitum utrinque 3. Ovipositor rectus vel incurvus.—ENEOPTERINÆ.

Tribus GRYLLOTALPINÆ.

Gryllotalpiens, Saussure, Miss. Scient. Mex., Orthopt. p. 333; Mélang. Orthopt. ii. fasc. 5, p. 186.

The Gryllotalpinæ are of subterranean habits and are partial to water *. The species of the first group (Gryllotalpites, Sss.) are furnished with a clothing of velvety hairs, which protects them while burrowing. They swim admirably well, their anterior feet being as well adapted for swimming as for digging. The species of the group Tridactilites are entirely aquatic. They live on the sandy shores of rivers, digging galleries in the sand and running, or rather skating, on the surface of the liquid element. When submerged by waves or the whirl of the current, they swim admirably with their hind tibiæ, which are sometimes furnished with articulated paddles, acting like oars; or they dart through the water—their very strong hind legs enabling them to take enormous leaps—till they reach the surface again.

GRYLLOTALPA, Latr. et auctt.

Gryllotalpa, Latreille et auctt. (1807).
Curtilla, Oken, Lehrbuch, iii. 1, p. 445 † (1815).

1. **Gryllotalpa hexadactyla,** Perty.

Gryllotalpa hexadactyla, Perty, Del. Anim. Artic. Bras. p. 119, t. 23. fig. 9 (1830); Sauss. Miss. Scient. Mex., Orthopt. p. 344. 5, fig. 22; et auctt.
Gryllotalpa longipennis, Scudd. Bost. Journ. Nat. Hist. vii. p. 426. 2 (1863).
Gryllotalpa azteca, Sauss. Rev. et Mag. de Zool. 1859, p. 316; Miss. Scient. Mex., Orthopt. p. 345.

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* To obtain specimens of the European *Gryllotalpæ* it is only necessary to throw water on the paths between the flower-beds of gardens and to cover the wetted places with pieces of board; in the morning some of these insects are almost sure to be found under the boards disporting themselves in the mud.

† This name is older than *Gryllotalpa*, having been employed by authors anterior to Linnæus. It is derived from *curtis*, garden, *curtilla*, gardener. The French word *courtilière* is derived from this.

Statura media. Tibiæ posticæ superne inermes, apice calcaribus 8. Trochanterum anteriorum processus brevis. Elytra dimidium abdomen tegentia. Alæ caudatæ, abdomen superantes.

Hab. MEXICO, Cordova, Cuernavaca, Tabasco (*Saussure*), Teapa in Tabasco (*H. H. Smith*); COSTA RICA (*Biolley*), Caché (*Rogers*).—COLOMBIA; GUIANA, Surinam; BRAZIL, Bahia; PERU, Chincha Is.; ANTILLES, Cuba, Guadeloupe.

A very common species inhabiting the warmer parts of America.

Uhler distinguishes *G. longipennis*, Scudd., from *G. hexadactyla*, Perty, by the elliptic ocelli, these being nearly orbicular in typical *G. hexadactyla*. We possess specimens of both forms from Mexico, the Antilles, and South America, and also others intermediate; it seems scarcely possible to separate them.

The var. *azteca*, Sauss. (Miss. Scient. Mex., Orthopt. p. 345), from Mexico, &c., is smaller, and has more numerous transverse nervures in the elytra dividing the ulnar cells, and more or less elliptic ocelli. It is scarcely possible to define the limits of this variety and the true *hexadactyla*.

2. **Gryllotalpa intermedia,** Sauss.

Gryllotalpa intermedia, Sauss. Miss. Scient. Mex., Orthopt. p. 345. 7 (♀ ♂).

Minuta; tibiis posticis supra inermibus, apice calcaribus 8. Processus trochanterum anteriorum brevis. Elytra femora dimidia superantia. Alæ caudatæ, abdominis apicem attingentes.

Hab. MEXICO, Vera Cruz (*Saussure*); GUATEMALA.

SCAPTERISCUS, Scudd.

Scapteriscus, Scudder, Proc. Bost. Soc. Nat. Hist. xi. p. 385 (1868); Saussure, Miss. Scient. Mex., Orthopt. p. 336.

Tibiæ anticæ didactylæ.

1. **Scapteriscus mexicanus,** Burm.

Gryllotalpa mexicana, Burm. Handb. ii. p. 740. 9 (1838).

Scapteriscus mexicanus, Scudd. Mem. Peabody Acad. Sci. i. p. 9, t. 1. figg. 6, 18 (1869); Sauss. Miss. Scient. Mex., Orthopt. p. 337. 1.

Elytra abdomen tegentia. Ultimus articulus tarsorum posticorum haud dilatatus, unguibus æqualibus.

Hab. MEXICO.—COLOMBIA.

2. **Scapteriscus didactylus,** Latr.

Gryllotalpa didactyla, Latr. Hist. Nat. Crust. et Ins. xii. p. 122 (1802); et auctt.

Scapteriscus didactylus, Scudd. Mem. Peabody Acad. Sci. i. p. 10, t. 1. figg. 1, 14 (1869); Sauss. Miss. Scient. Mex., Orthopt. p. 338.

Elytra abdomen tegentia; alis caudatis. Ultimus articulus tarsorum posticorum dilatatus, unguibus inæqualibus.

Hab. MEXICO; GUATEMALA (*Champion*).—SOUTH AMERICA, Guiana, Brazil, Peru, Argentina, North Patagonia; ANTILLES.

[3. **Scapteriscus variegatus,** Burm.

Gryllotalpa variegata, Burm. Handb. d. Ent. ii. p. 740. 11 (1838).
Scapteriscus variegatus, Scudd. Mem. Peabody Ac. Sci. i. p. 14 (1869); Sauss. Miss. Scient. Mex., Orthopt. p. 339. 5 (♀).
Gryllotalpa parvipennis, Serv. Orthopt. p. 309 (1839).

Elytra abbreviata, dimidium abdomen tegentia. Alæ elytra paulum superantia.

Hab. COLOMBIA (Panama?); ANTILLES, St. Lucia.]

Tribus TRIDACTYLINÆ *.

Tridactylites, Saussure, Miss. Scient. Mex., Orthopt. p. 347; Mél. Orth. 5e fasc. p. 47 †.
Tridactylidæ, Brunner von Wattenwyl, Prodromus d. Europ. Orthopt. p. 453.

The two genera forming this group are nearly allied to the true Gryllotalpinæ, but differ from them by well-marked characters; I therefore follow Brunner de Wattenwyl in separating them from the Gryllotalpinæ ‡. The group Tridactylinæ has an evident affinity with the Acridiidæ.

Its principal characters are as follows:—

Short, filiform antennæ; coriaceous elytra, in repose sometimes united and forming a roof, as in the Acridiidæ; flabelliform wings, divided by a transverse nervure, and when at rest forming at the tip a compressed lamella, as in the Acridiidæ; exceedingly wide hind femora and a very curious elongate armature of the hind tibiæ, giving to these insects an enormous saltatorial power §; two-jointed anterior and intermediate tarsi; and the hind tarsi with one joint only.

But the most striking character of this group lies in the fact that the end of the abdomen bears four appendages, which is a unique exception in the Orthoptera.—The homology of these appendages has not hitherto been established with certainty. Dissection shows that the two superior ones (Tab. XI. figg. 3, *c.*—8, *c.*—9, *c.*—10, *c*) are the homologues of the cerci of the Orthoptera, and that the inferior ones (Tab. XI. figg. 3, *a.*—8, *a.*—9, *a*) are formed by very curious processes of the inferior valvulæ of

* Explanation of the figures on Tab. XI. figg. 1–7, relating to the genus *Tridactylus*:—Nos. 7, 8, 9, normal numbers indicating the numerical order of the abdominal segments or their homologues; 9 *i*, the 9th ventral segment, or infragenital plate; *c*, cerci; *a*, anal appendages; *vs*, the supra-anal plate (or the 10th dorsal segment); *i*, ditto, inferior side.

† Comp. also: Saussure & Zehntner, "Notice morphologique sur les Gryllotalpiens" [Revue Suisse de Zoologie, ii. p. 403 (1891)].

‡ The Tridactylinæ are included under the Gryllotalpinæ in my "Synopsis tribuum," *anteà*, p. 198.

§ *Vide* Saussure, Miss. Scient. Mex., Orthopt. p. 321.

the anus (Tab. XI. fig. 10, *a*) *. The four appendages, notwithstanding their resemblance, are thus proved to be of quite a different nature.

All the Tridactylinæ seem to have fossorial habits. They live in the sandy beds of rivers, and run and jump with great agility on the surface of the water. When submerged by the whirling of the current, they hop with the utmost vigour in their endeavours to reach the surface, and when that is gained they make tremendous leaps to reach the shore †.

The aquatic habits of these interesting little insects explain, perhaps, the use of their four anal appendages. When submerged, they carry with them little bubbles of air, between the hind femora and the abdomen, which perhaps enable them to breathe under the water, and, acting like bladders, bring them again to the surface. It is probable, too, that bubbles of air are also retained between the four pubescent anal appendages; but I have not succeeded in verifying this with sufficient certainty, on account of the rapid movements of the insects.

The affinities of the two genera composing the group Tridactylinæ are not the same, and it is surprising that two types so similar to each other incline towards two different families: *Tridactylus* being more allied to the Gryllotalpinæ, having no ovipositor whatever; while *Rhipipteryx* inclines towards the Acridiidæ, as will be seen below.

TRIDACTYLUS, Oliv.

Tridactylus, Olivier (1779).—*Heteropus*, Palis.-Beauv. (1805).—*Xya*, Illiger (1835).

Feminæ ovipositore destitutæ.—Abdomen sicut in *Gryllotalpis*, in utroque sexu conforme; segmenta dorsalia 10, ventralia 8 obferens. Cerci biarticulati, articulo secundo brevi ac gracili, mobili. Appendices anales inferi cylindrici, indivisi.

These small insects are closely allied to *Gryllotalpa*. The body is similarly formed; the head is conical, directed forwards, well suited for progression underground; the anterior tibiæ are strongly fossorial, and are used for digging galleries in the sandy shores of rivers, instead of in the fields, as in *Gryllotalpa* ‡. The females have no ovipositor whatever, and the abdomen has consequently the same number of segments in both sexes. This is the reason why the males had never been properly distinguished from the females.

There is, however, a difference to be noticed between the sexes: in the females of *T. variegatus* the penultimate ventral segment has generally a slight notch in the middle of the hind margin (Tab. XI. fig. 6), and it is followed by a sort of appendage

* *Vide* Saussure & Zehntner, Notice morphologique etc. p. 410.

† For the aquatic habits of the *Tridactyli*, *vide* H. de Saussure, Miss. Scient. Mex., Orthopt. p. 322.

‡ Their habits have been described in a very charming way by L. Dufour and by Foudras. (Extract in Serville, Orthoptères, p. 313.)

in the form of a small segment, which is parted in the middle * (though not always projecting beyond the true segment). This appendage is certainly homologous with the inferior valvæ of the ovipositor, which are formed by the connecting membrane of the eighth segment. The last ventral segment is parted by a ridge, a character indicating a tendency of this segment to divide into two parts, so as to form the superior valvæ of the ovipositor. The structure of the eighth and ninth (seventh and eighth as seen without dissection) segments shows a rudimentary, but evident, tendency to the formation of an ovipositor †. In the males (Tab. XI. fig. 2) the last two ventral segments are simple, without any such modification, and the terminal one is almost square.

Nevertheless, the two sexes are not always easy to distinguish on account of the characters of the females being rather variable. Generally, the appendix of the eighth segment is not produced and apparent, and in some species the notch of this segment is obsolete—*e. g.* in *T. histrionicus*, the eighth segment in this insect being, on the contrary, produced in the middle, instead of notched (Tab. XI. fig. 1).

The differences between the sexes are best summarized as follows: ♀, last ventral segment usually parted by a ridge, the hind margin of the preceding segment notched or produced in the middle; ♂, the last ventral segment entire, the penultimate segment transverse, entire.—In both sexes the cerci (Tab. XI. figg. 1, 2, 3, *c*) are two-jointed, and the anal appendages (Tab. XI. figg. 1, 2, 3, *a*) are entire and cylindrical.

Several species of *Tridactylus* have been characterized only by their markings and by the length of the wings; but the colour is of slight importance in this genus, the yellow markings being subject to disappear altogether, and the wings are very variable in their length, tending to atrophy in specimens of the same species. The real distinctive characters are to be found in the size, in the armature of the hind tibiæ, and in the length of the posterior metatarsus; also, in some species, in the form of the anterior tibiæ (♂), or in the structure of the last ventral segments (♀) ‡.

The *Tridactyli* are found abundantly, and with similar forms, in all parts of the world, except apparently Australia.

* Comp. Saussure & Zehntner, Revue Suisse de Zoologie, ii. p. 411, t. 16. fig. 20 *u*.

† Comp. Saussure & Zehntner, *l. c.* p. 411.

‡ It has been admitted that in some *Tridactyli* the anterior and intermediate tarsi are composed of three, and in others of two joints only. A careful examination of all the species in my possession has proved that the tarsi do not in any case possess more than two joints. The illusion of their possessing three joints is easy to explain by the fact that the first joint of the intermediate tarsi is lobed (Tab. XI. fig. 5), and appears under the magnifying-glass as if divided into two parts, and also by the fact that the lobulum in which it terminates is often accidentally curved downwards and takes the appearance of an additional joint. Examination under the microscope explains these appearances. In consequence of this, the classification of the genus, as established formerly by Burmeister and by myself, should be modified: the divisions *Xya* and *Tridactylus*, Sauss., will form a single division only, and the name *Xya*, as the more recent, must be excluded. The Central-American species must thus be co-ordinated with the synopsis here given.

Synopsis specierum.

I.

1. Tibiæ posticæ lamellis natatoriis mobilibus utrinque 4 instructæ.—TRIDACTYLUS.
   a. Marium tibiæ anticæ valde difformes, furcatæ, apice angustæ, bispinosæ, intus in processum divergentem, ungue longo armatum productæ.—1. *apicalis*, Say.
   aa. Marium tibiæ anticæ haud difformes, illis feminarum sensim conformes, margine apicali, calcaribus apicalibus 4 armato.
      b. Minor. Tibiæ anticæ in margine apicali fissæ; scilicet acute incisæ; calcaria hoc propter per pares ordinatæ. Metatarsus posticus calcaribus æquilongus.—2. *fissipes*, Sss.
      bb. Majusculus. Tibiæ anticæ ♂ normales, haud fissæ, illis feminarum complete conformes. Metatarsus posterior calcaribus brevior.—4. *mixtus*, Hald.

1, 1. Tibiæ posticæ lamellis natatoriis destitutæ.—HETEROPUS, Sss.
   a. Supra marginibus integris. Metatarsus posticus abortivus.
      b. Minimus; tibiis posticis spinis nullis.—5. *histrionicus*, sp. n.
      bb. Minutus; tibiis posticis spinis mobilibus 2–3 armatis.—[6. *histrio*, sp. n.]
   aa. Marginibus valde serratis. Metatarsus posticus calcaribus æquilongus.—[7. *denticulatus*, Sss.]

II.

Feminæ nobis cognitæ.

   a. Ultimum segmentum ventrale integrum, haud divisum; penultimum segmentum in medio incisum. (Tab. XI. fig. 6.)
      b. Statura minore.—3. *incertus*, Sss.
      bb. Statura majuscula.—4. *mixtus*.
   aa. Ultimum segmentum ventrale per sulcum divisum; penultimum angulato-productum. (Tab. XI. fig. 1.)—5. *histrionicus*.

III.

Tibiæ posticæ ♀ ♂:

   a. superne marginibus serratis; calcaribus superis apice uncinatis;
      b. tenuiter denticulatæ.—*apicalis, mixtus, fissipes*.
      bb. crasse denticulatæ.—*denticulatus*.
   aa. marginibus integris; calcaribus superis haud uncinatis.—*histrionicus, histrio*?

1. **Tridactylus apicalis**, Say. (Tab. XI. fig. 7.)

Tridactylus apicalis, Say, Journ. Acad. Phil. iv. p. 310, fig. 1 (1825); Complete Writings, ii. p. 239; Scudder, Bost. Journ. Nat. Hist. 1862, p. 425, fig. 1 (♂); Sauss. Miss. Scient. Mex., Orthopt. p. 351. 1.

Xya apicalis, Burm. Handb. d. Ent. ii. p. 742.

Tridactylus tibialis, Guérin-Ménev. Icon. du Règn. Anim. p. 336 (♂) (1840).

Fuscus, nitidus. Antennæ fuscæ, articulis basi flavis. Palpi flavi. Cranium inter oculos flavum vel flavo-bifasciatum. Pronotum subtumidum, anterius coarctatum. Elytra superne flava. Alæ abdominis longitudine vel caudatæ, fusco-testaceæ, margine dorsali flavido. Pedes antici flavo-testacei. Femora 2^{m}, 3^{m} fusca, apice et margine infero flavidis; tibiæ intermediæ flavæ, basi et in medio fuscæ. Tibiæ

posticæ flavæ, supra in medio extus denticulis crassioribus 3–4 instructæ. Tarsi omnes flavi; antici et intermedii apice fusci; postici calcaribus tibiarum æquilongi. Abdomen supra fuscum, segmentis partim flavo-limbatis; subtus dense punctulatum, flavum, segmentis basi plus minus fuscis. Cerci fusci, secundo articulo flavo, apice nigro. Appendices anales flavi, apice fusci.

♂. Pedes antici (fig. 7) difformes. Femora anteriora dilatata, margine supero valde arcuato, infero triangulato. Margo inferus coxarum apice bidentulus; ille femorum totus crenatus, basi 4-dentulus. Tibiæ late furcatæ, in partes duas divergentes divisæ; pars supera apice bispinosa, infera processum ingentem subrectum, tarsum gerentem, apice ungue gracili arcuato longissimo armatum, formans; (processus et unguis apice fusci). Penultimum segmentum ventrale transversum; ultimum fuscum, trapezinum. Appendices anales sat fusiformes.

Var. *a*. Plus minusve flavo-varius; ore flavicante; femoribus posticis vitta longitudinali vel maculis flavis; pedibus intermediis luteis fusco-maculatis; pronoto supra lutescente.—*b*. Alis abbreviatis.

Long. corp. 6, cum alis 6·5 millim.

FIGURE.—Fig. 7, anterior leg of the male: *f*, femur; *t*, tibia; *s*, tarsus.

Hab. NORTH AMERICA, Southern and Western States, Texas (*Boll*).—GUATEMALA, San Gerónimo (*Champion*).

The very extraordinary form of the anterior tibiæ of this species should be well understood. The tibia is very broadly and deeply emarginate at its superior edge, and thus divided into two divergent branches. The upper branch terminates in two spurs. The inferior branch (*t*) is very elongate and attenuated at the tip: thus it has lost one of its spurs, and the other spur has grown to an enormous size, forming a regular claw. This branch bears the tarsus (*s*).

Obs. 1.—Burmeister, in his diagnosis of this species, describes the anterior tibiæ in an unintelligible manner. It would appear that in his insect a tibia had been broken off and repaired by gluing the end of the inferior branch (*t*) to the femur; thus he could regard the tibia as being very thin at the base and dilated at the end . . . ?

Obs. 2.—It has been stated that *T. apicalis* is found also in the East-Indian region. This is a mistake; it is a purely American species. The Indian insect referred to *T. apicalis* belongs to a different species, well characterized by the form of the anal pieces of the abdomen, which greatly resemble those of *T. mixtus*.

Obs. 3.—It is a question whether the extraordinary form of the anterior tibiæ is characteristic of the males only, or common to the two sexes. If it is peculiar to the males, *T. incertus* (no. 3) might prove to be the female of *T. apicalis*.

2. **Tridactylus fissipes,** Sauss.

Tridactylus fissipes, Sauss. Miss. Scient. Mex., Orthopt. p. 352. 3, t. 8. figg. 25, 25 *a* (♂).

Nigro-æneus; corpore immaculato. Antennæ fuscæ vel fusco-annulatæ. Elytra in dorso testacea. Alæ fusco-testaceæ, abdominis apicem attingentes. Pedes antici testacei, tibiis fusco-marginatis; intermediorum femora et tibiæ fusca, margine infero flavo, femoribus apice, tibiis basi et apice flavis; femora postica fusca, apice flavicantia, margine infero flavo; tibiæ flavæ. Tibiæ posticæ supra in medio, saltem extus, denticulis minutis 3–4 armatæ. Tarsi omnes flavi, vel apice puncto fusco. Metatarsus posticus calcaribus æquilongus. Cerci nigri, apice longiuscule flavi vel testacei. Appendices anales graciles, teretes, fusci, basi rufescentes. Long. 7·5 mill.

♂. Tibiæ anticæ haud difformes, sed margine apicali V-formiter inciso, ac 4-dentato, calcaribus in apice dentium exsertis.

Var. Tibiæ anticæ ♂ apice tantum 3-dentatæ.
♀. Incerta (comp. *T. incertus*, infrà).
♀ ♂. Long. corp. 6, cum alis 7·5 millim.

Hab. North America, Carolina and Louisiana (*Saussure*), Texas (*Boll*).—Mexico, Tamaulipas (*Saussure*).

Of the size of *T. apicalis*. In the males the anterior tibiæ are parted at their apical margin by a cuneiform notch, and each portion of the margin forms two triangular teeth, each bearing one of the four spurs. In some specimens the notch is less distinct, and the tibiæ thus resemble those of the females in general.

In the males the last two ventral segments of the abdomen are lamellate, the penultimate segment transverse, the terminal plate nearly square when it is unfolded, as in *T. mixtus*—more or less elongate, according to whether the segment is extended or contracted.

3. **Tridactylus incertus.** (Tab. XI. fig. 6.)

♀. *T. apicali* et *T. fissipedi* simillimus, tibiis anterioribus tamen ut in feminis solitum simplicibus, normalibus, subpiriformibus, margine apicali haud diviso, calcaribus 4 regulariter armato. Penultimum segmentum ventrale transversum, margine postico in medio incisura minuta notato (hæc nonnunquam per discum rufum impleta). Ultimum segmentum quadratum, subtrapezinum, integrum, scilicet per sulcum nullum divisum, luteum vel fuscescens.

Figure.—Extremity of the abdomen, ♀, from beneath—8, penultimate ventral segment, showing the notch; 9 *i*, last ventral segment; *c*, cerci; *a*, anal appendages.

Hab. North America, Texas (*Boll*).—Mexico (*Sumichrast*).

This is certainly not a distinct species; it can be only the female of *T. apicalis* or *T. fissipes*, but it is impossible to decide to which of them it belongs. I am inclined to regard these females as belonging to *T. fissipes*, but I am obliged to give them a provisional name.

4. **Tridactylus mixtus,** Hald.

Xya mixta, Haldeman, Proc. Acad. Phil. vi. p. 364 (1853).
Tridactylus mixtus, Sauss. Miss. Scient. Mex., Orthopt. p. 353. 4*.

Majusculus, brunneus, flavido-variegatus, pedibus flavo-fasciatis. Alæ abdominis longitudine. Pedes antici in utroque sexu simplices similesque, apice calcaribus 4. Tibiæ posticæ et tarsi omnes sulfurei. Tibiæ posticæ margine externo dentibus subtilibus 3–4 serrulato. Metatarsus posticus dimidiæ longitudine calcarium paulo longior. Appendices anales teretes.—Long. corp. 8·6, cum alis 10·5 millim.

♀. Penultimum segmentum ventrale transversum; margine postico leviter inciso; ultimo subquadrato, indiviso (sicut in *T. incerto*).

♂. Ultima segmenta 2 ventralia lamellaria. Lamina infragenitalis longiuscula, subquadrata vel elongato-trapezina; segmentum præcedens transversum.

Hab. North America, Louisiana, Carolina, Texas.—Mexico (*Saussure*).

The specimens from which the above diagnosis is taken belong, I believe, to *T. mixtus*,

* Erratum: *instead of* par sa plus *petite* taille, *read* par sa plus *grande* taille.

incompletely described by Haldeman, the size being the same and the other North-American species all smaller. It differs from *T. fissipes* in the form of the anterior tibiæ of the male, these not being more or less notched on their apical margin.

This is the largest American species of the genus. It is particularly distinct by its size. *T. mixtus* closely resembles *T. brunneri*, Sss., and *T. thoracicus*, Guér., in general facies, but differs from both of these Indian species by the form of the anal pieces.

5. **Tridactylus (Heteropus) histrionicus,** sp. n. (Tab. XI. figg. 1–5.)

Minimus, nigro- (vel fusco-) et sulfureo-multipictus. Antennæ nigræ vel flavo-annulatæ. Caput fuscum, frequentius flavo-punctatum, palpis flavis. Pronotum flavum, fusco-multipictum, vel nigrum, marginibus flavis, disco flavo-punctato, retro flavo-marmorato. Elytra fusca, flavo-bifasciata. Alæ abdomen superantes, fusco-nebulosæ, margine dorsali anguste fusco. Pedes antici flavi, anterius brunnei, maculis et genubus flavis. Pedes intermedii nigri, femoribus flavo-fasciatis, tibiis flavo-tripunctatis. Femora postica nigra, flavo-multipicta, vel flava, nigro lacerato-bifasciata. Tibiæ posticæ flavæ, apice brunnescentes, subtus brunneæ, lamellis natatoriis destitutæ marginibusque integris, supra apice bicarinatæ (carinis spinas appressas imitantibus). Calcaria supera subrecta, apice haud uncinata. Metatarsus nullus (tuberculiformis). Abdomen nigrum, subtus flavum, supra segmentis flavo-limbatis, ano nigro; cercis et appendicibus analibus nigris. Cercorum articulus secundus brevis. Tibiæ anticæ marium (fig. 4) illis feminarum similes.—Long. 4 millim.

Var. *a*. Alæ abbreviatæ vel rudimentales, inconspicuæ.—*b*. Alæ caudatæ, sordide hyalinæ.

Variat in pictura multifarie, plus minus flavo-, vel fusco-ornatus, nonnunquam pronoto toto nigro, angulis posticis flavis; vel ipse totus niger, punctis rarioribus flavis conspersus; interdum abdomine subtus fusco, segmentis omnibus flavo-limbatis.

♀. Ventris segmentum penultimum (fig. 1, *i*) triangulare, angulatum. Ultimum segmentum (*vi*) subquadratum, angulis rotundatis, per sulcum divisum (nonnunquam subbilotatum).

♂. Penultimum segmentum ventrale (fig. 2, 8) transversum; ultimum (*i*) subquadratum, integrum.

FIGURES.—Fig. 1, extremity of the abdomen from beneath, ♀.—Fig. 2, ditto, ♂;—8, penultimate ventral segment;—9, 9 *i*, terminal segment or infragenital plate;—*c*, cerci;—*a*, anal appendages.—Fig. 3, extremity of the abdomen ♀, from above;—9 *i*, terminal segment;—*c*, cerci;—*a*, anal appendages;—*vs*, supra-anal plate.—Fig. 4, anterior tibia and tarsus (outside).—Fig. 5, intermediate tibia and tarsus.

Hab. NORTH AMERICA, Texas, Dallas (*Boll*).—MEXICO, Atoyac in Vera Cruz, Frontera and Teapa in Tabasco (*H. H. Smith*).

This little species forms in the genus a particular type on account of the hind tibiæ being without teeth, but presenting above at the tip, on each side, a carinule, which has the appearance of a styliform appendage, not separated from the tibiæ. The two superior spurs also are of exceptional form—somewhat elongate, slender, cylindric, not hooked at the tip, terminated by stiff setæ only. The inferior spurs are scarcely toothed at the tip.

[6. **Tridactylus (Heteropus) histrio,** sp. n.

Minutus, niger vel fuscus, multifarie flavo-pictus; *T. histrionico* simillimus. Tibiæ posticæ marginibus integris, nec serratæ nec lamellis instructæ, sed apice spinis 1 : 2 mobiles gerantes; calcaribus superis gracilibus, uncinatis, inferis longissimis, $\frac{2}{5}$ tibiæ æquantibus. Metatarsus posticus abortivus, non perspicuus. Abdomen superne fuscum, segmentis flavo-marginatis, subtus frequenter flavis; cercis fuscis, articulo apicali flavido; appendicibus analibus brunneis.—Long. corp. 5 millim.

Var. *a*. Obscurus, parum flavo-variegatus; pronoti angulis posticis flavis. [Texas.]
Var. *b*. Maxime flavo-pictus, vel flavus, fusco-rufo variegatus. [Cuba.]

Hab. North America, Texas.—Antilles, Cuba (*Dr. Krug*).

Somewhat larger than *T. histrionicus*, and apparently differing from that species by the two little spines of the posterior tibiæ. (Description taken from my manuscript notes.)]

[7. **Tridactylus (Heteropus) denticulatus,** Sauss.

Tridactylus denticulatus, Sauss. Miss. Scient. Mex., Orthopt. p. 353. 6, t. 8. figg. 26, 26 *a* (♂); Mél. Orth. 5e fasc. p. 54. 10 (♂).

Sat minutus, crassus, fuscus, pedibus plus minusve flavo-pictis; tibiis posticis flavis, robustis, in utroque margine crasse serratis (denticulis 8–9); calcaribus superis crassiusculis, valde uncinatis; metatarso longissimo, quam calcaria longiore.—Long. 5 millim.

♀. Penultimum segmentum ventrale majusculum, subquadratum, margine postico arcuato; ultimum transversum, subrotundatum, sulco divisum, corneum. Appendices anales gracillimi.

♂. Penultimum segmentum ventrale transversum; ultimum parum productum, transversum, trapezinum vel subrotundatum, margine apicali truncato. Appendices anales mediocres.

Hab. Amazons, Pará (*Mus. Genavense*).]

RHIPIPTERYX, Newm.*

Rhipipteryx, Newman;—Brullé;—Serville;—Saussure, Miss. Scient. Mex., Orthopt. p. 354; Mél. Orthopt. 5e fasc. p. 55.

Feminæ ovipositore brevi quadrivalvo instructæ. Cerci obsolete multiarticulati. Appendices anales inferi in forma variabiles.

Rhipipteryx seems to be almost as nearly allied to the Acridiidæ, especially to the genus *Tettix*, as to the Gryllotalpinæ. Indeed, all their general characters are more those of Acridiidæ: head perpendicular; the pronotum in the shape of a saddle; the anterior legs longer, more slender, and less fossorial than in the *Tridactyli*; the elytra placed on the back in the form of a roof; and the females with a short ovipositor, much resembling that of the same sex of the Acridiidæ. Nevertheless, *Rhipipteryx* has an intimate relationship with the *Tridactyli*.

Their habits are not known, but it is probable that they are very similar to those of *Tridactylus*. The species of *Rhipipteryx* are presumed to burrow in the sand, for their anterior tarsi can be doubled up in the ridge of the tibiæ, so as to leave the apical spurs of the latter free, as in *Tridactylus*; but, having longer and thinner legs, their digging

* Explanation of the figures on Tab. XI. figg. 8–14, relating to the genus *Rhipipteryx*: nos. 6–10, normal numbers indicating the numerical order of the abdominal segments or their homologues.—Fig. 8, *R. mexicana*, extremity of the abdomen, ♀, seen from above—8 *u*, inferior valvæ of the ovipositor; 9 *b*, 9 *o*, superior valvæ of the ovipositor.—Fig. 9, extremity of the abdomen, ♀, in profile.—Fig. 10, ditto, ♀, seen from above, opened and dissected.—Fig. 11, ditto, from beneath.—Fig. 12, extremity of the abdomen, ♂, seen in profile.—Fig. 13, ditto, from above.—Fig. 14, ditto, from beneath.

power must be weaker, and, their posterior tibiæ being destitute of pallets, they are very likely not so much aquatic, *i. e.* not such good swimmers as some of the *Tridactyli*. Their lighter colour suggests, however, that they move about still more easily than the latter on the surface of the calm water, helping themselves with their extended wings *.

In *Rhipipteryx* the cerci are obsoletely multi-articulate. The anal appendages of the females are obsoletely parted in the middle; the apical half being compressed, dilated, and of ovoid form (Tab. XI. fig. 10). The last dorsal segment of the abdomen of the males is frequently very abnormal in form, it being in some species much widened and reflexed, *i. e.* strongly modified as in various Acridiidæ. When this is the case the cerci and the anal appendages remain small and slender (Tab. XI. fig. 22).

The genus *Rhipipteryx* is peculiar to America; it does not extend so far into the temperate regions as *Tridactylus*.

The parts of the mouth of *Rhipipteryx* having never been described, I give figures of them:—Tab. XI.: figg. 17, labium; 18, maxilla; 19, mandible. The labium much resembles that of *Tridactylus*; the third joint bears paraglossæ, with membranous apex (in *Tridactylus* these appendages are two-jointed).

Synopsis specierum.

a. Species majores, nigræ. Facies inter antennas ♀ ♂ plana.

b. Totæ nigræ, calcaribus tibiarum posticarum nigris. Oculi parum prominuli, invicem valde remoti.

c. Antennæ articulo 6° luteo. Metatarsus posticus gracilis, calcaribus æquilongus. Oculi posterius vix sinuati.—[1. *forceps*, sp. n.]

cc. Antennæ articulis 8° et 9° luteis. Metatarsus posticus calcaribus subbrevior. Oculi posterius distincte sinuati.—2. *carbonaria*, sp. n.

bb. Flavo-variegatæ, calcaribus tibiarum posticarum flavidis. Pronotum circumcirca flavo-limbatum. Oculi invicem paulo propiores.

c. Pronoti discus utrinque linea obliqua flava.

d. Elytra margine suturali flavo-limbato. Femora postica linea media flava nulla. (Statura præcedentium.)

e. Oculi vix prominuli. Corporis picturæ flavæ angustæ. Metatarsus posticus crassiusculus, quam calcaria tibiarum $\frac{1}{4}$ brevior. Appendices anales (♂) grandes, toti nigri. Segmentum genitale ♂ supra planulum, margine sinuato; lamina supra-analis longe anguste producta, sulcata, acuta.—[3. *brullei*, Serv.]

ee. Oculi ♂ prominuli. Corporis picturæ flavæ latæ. Metatarsus posticus ovato-conicus, quam calcaria $\frac{1}{3}$ brevior. Appendices anales (♂) cylindrici, graciles, apice flavi. Segmentum genitale ♂ latissimum reflexum, angulis lateraliter acutissime productis; lamina supra-analis utrinque transversa, strigata, parte media anguste producta, sulcata (fig. 22).—[4. *cyanipennis*, Sss.]

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* Amongst the Tettigidæ, *Scelimene* seems to have similar habits.

dd. Elytra circumcirca flavo-limbata. Femora postica linea longitudinali flava. (Statura minor.) Segmentum genitale ♂ latissimum, erectum, utrinque lateraliter acutissime productum (sicut in *R. cyanipenni*); lamina supra-analis fissa, forcipe instar bipartita (Tab. XI. fig. 20)—[5. *rivularia*, sp. n.]

cc. Pronoti discus immaculatus. Statura minor, *R. rivulariæ*. Oculi prominuli.

d. Metatarsus posticus calcaribus æquilongus; his flavis. Appendices anales ♂ graciles, nigri, ♀ secunda parte ovata, linea flava.—6. *limbata*, Burm.

dd. Metatarsus posticus calcaribus sensim brevior; his subtus brunneis. Appendices anales nigri.—7. *hydrodroma*, sp. n.

aa. Species minutæ (long. 5 mm.) oculi posterius sensim sinuati.

b. Minutæ, nigræ vel rufæ, flavo-variegatæ, oculis invicem modice remotis *. Facies inter antennas, *in maribus*, vitta transversa tumida scrobiculata flava instructa (fig. 16). Metatarsus posticus longiusculus.

c. Vitta flava faciei ♂ impressionibus 3 nigris notata—*mexicana*, Sss., et affines vel varietates, ut sequitur distinguendæ:

d. Pronoti discus macula rufa notatus.

e. Pronotum anterius haud flavo-limbatum.

f. Paulo minor, nigra.—8. *mexicana*, Sss. (typus).

ff. Paulo major, plus minus rufo-varia; nigra, femoribus posticis apice rufis, vel omnino rufescens.—8 *a*. *fraterna*, Sss.

ee. Pronotum circumcirca flavo-limbatum. Nigra, pedibus rufo-avellinis; pronoti macula elongata.—8 *b*. *tricolor*, Sss.

dd. Pronoti discus immaculatus, circumcirca flavo-limbatus. Color fundamentalis nigra.—9. *biolleyi*, sp. n.

cc. Vitta transversa facialis ♂ scrofuloso-tumida, impressionibus nigris nullis. Nigra; pronoto circumcirca flavo-limbato, macula disci nulla.—10. *scrofulosa*, sp. n.

bb. Minima, colore fulvo-fusca, sordida. Facies inter antennas ♀ ♂ plana. Oculi superne invicem maxime approximati †. Metatarsus posticus brevissimus.—11. *pulicaria*, sp. n.

[1. **Rhipipteryx forceps**, sp. n. (Tab. XI. fig. 23.)

Rhipipteryx atra, Sauss. Miss. Scient. Mex., Orthopt. p. 361. 8 (nec Serville).

♂. Crassiuscula, tota atra, cyanescens, velutino-sericans. Antennarum articulus 6^{s} albido-sulfureus. Oculi parum prominuli. Pronotum crassum, marginibus lateralibus antice leviter sinuatis; postice rotundatum, incisuris humeralibus obtusissimis, tamen distinctissimis. Elytra apice oblique subtruncata (femora intermedia haud superantia, conchas femorum haud attingentia). Alæ hyalino-nebulosæ, breviter caudatæ, abdomen ♀ haud, ♂ parum longe superantes. Femora antica latere interno apice puncto, tibiæque intermediæ basi breviter, sulfureis. Femora postica intus margine infero testaceo; tibiis fuscis. Tibiæ anticæ latiusculæ, intus elongato-foveolatæ. Metatarsus posticus elongatus, calcaribus paulo longior.

Var. *a*. Omnino nigra.—*b*. Antennarum annulo luteo variabili.

♀. Ultimum segmentum dorsale incisum. Lamina supra-analis minuta, anguste trigonalis, sulcata. Appendices anales tumidi, subclavati, secundo articulo ovato.

♂. Antennarum articuli 3^{s}–5^{s} supra puncto luteo ornati. Lamina supra-analis (*vs*) trigonalis, basi foveola trigonali notata, utrinque oblique strigata. Cerci (*c*) fusiformes. Appendices anales (*a*) magni, arcuati,

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* Spatium inter illos fere eorum latitudinem æquans.

† Spatium inter illos = $\frac{1}{4}$ eorum latitudinis.

apice compressi, dilatati ac truncati, latere interno concavo, foveolato ; simul sumpti forcipem efficientes (*a*). Lamina infra-genitalis convexa, apice compresso-carinata.

♀. Long. corp. 9·2, cum alis 9·2 millim.

♂. Long. corp. 8, cum alis 9·3 millim.

Hab. COLOMBIA, most likely extending to Panama and Central America.

This species is very similar to *R. carbonaria* in colour, but differs from that insect by its short form. It has the pronotum shorter, with the posterior process but little produced, the hind margin less arcuate, the humeral emargination very obtuse, although more distinct than in *R. mexicana*, and the lateral margins arcuated. The cerci of the male forming a sort of forceps is very characteristic.

Obs.—*Rhipipteryx atra*, Serville, Orthoptères, p. 318, and Guérin-Ménéville, Icon. Règn. Anim., Ins. p. 338, a much smaller species (length 2 lines) from the same region, is unknown to me.]

2. **Rhipipteryx carbonaria,** sp. n.

♀. Gracilis, elongata, tota atra, subglabra, corpore picturis nullis. Antennæ articulis 3 ultimis sulfureis, ultimo apice nigrescente. Caput lævigatum. Pronotum longiusculum, processu postico longiore, margine magis arcuato ; sinu humerali utrinque valde inciso, obtusangulo ; lobis lateralibus postice margine infero recto. Elytra basin concharum femorum posticorum superantia. Alæ longe caudatæ, totæ nigræ. Tibiæ antice graciles, latere interno sulco angusto exaratæ. Femora postica longiuscula, angusta. Tibiæ posticæ, calcaria et metatarsi fusca vel nigra, fulvo-pilosella ; metatarso calcaribus æquilongo.

♀. Long. corp. 10, cum alis 13 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

[3. **Rhipipteryx brullei,** Serv. (Tab. XI. fig. 21.)

Rhipipteryx brullei, Serv. Orthoptères, p. 318. 2; Sauss. Miss. Scient. Mex., Orthopt. p. 357. 2.

Xya notata, Burm. Handb. d. Ent. p. 742. 6.

Nigra, plus minus flavo-notata, pronoti disco lineolis 2 flavis. Elytra lineola longitudinali flava. Abdominis ultima segmenta dorsalia ♂ in arcum sinuata ; segmentum 9^{m} prominulum, fere transverse quadratum, lævigatum, margine postico subrecto, in medio tenuiter depresso. Lamina supra-analis (*vs*) elongata, tota subcanaliculata, in 3 partes consequentibus divisa : pars basalis transversa, utrinque ad cercorum exsertionem incisa ; pars intermedia pagum parvum medium quadratum divisumque, nec non utrinque lobum parvum angustum obferens (vel si mavis in 4 partes longitudinales divisa) ; pars apicalis acute cuneiformis ac sulcata.—Long. corp. 9·2 millim.

Hab. BRAZIL (*Mus. Genavense*).

Having only one specimen in my possession, I am unable to dissect the anal pieces. It is very difficult to make out the structure of them with precision, if not separated. Their appearance as here described may therefore be somewhat illusory.]

[4. **Rhipipteryx cyanipennis,** Sauss. (Tab. XI. fig. 22.)

Rhipipteryx cyanipennis, Sauss. Miss. Scient. Mex., Orthopt. p. 385. 5.

♂. *R. limbatæ* simillima, picturis sulfureis tamen latioribus, pronotoque anterius utrinque macula transversa

sulfurea. Elytra margine suturali a medio et apicali sulfureo. Alæ longe caudatæ, ad sulcum transversum campi opaci vitta vel macula trigonali sulfurea in margine postico (supero) anguste producta. Tibiæ posticæ fuscæ, subtus flavescentes; calcaribus et metatarso flavis; hoc crassiusculo, $\frac{2}{3}$ calcarium longitudine æquante. Cerci (*c*) et appendices anales (*a*) graciles, breviusculi; his haud dilatatis, apice flavo, longe setosis. Lamina infra-genitalis (9 *i*) parabolica, apice bi-impressa (ab infero fere ut tridentulata). Segmentum dorsale 8^{m} trapezinum, convexiusculum, sulco-divisum, margine postico in medio subtiliter, in lateribus latius, flavo. Segmentum 9^{m} latum, quando erectum angulis lateralibus (a latere) acutissimis, anguste dentiformibus, margine postico transverso, recto latissimo, a supero arcuato, anguste flavo, angulis tamen nigris. Segmentum 10^{m} utrinque tæniam transversam, per lineam longitudinalem divisam ac transverse pectinatim strigatam obferens; ejus pars media (*vs*) seu lamina supra-analis angusta, plicata, canaliculata.

Var. Pronotum maculis 2 luteis nullis. [GUIANA.]

♂. Long. corp. 8·7, cum alis 13 millim.

Hab. SOUTH AMERICA, Guiana and Venezuela (*Mus. Genavense*).]

[5. **Rhipipteryx rivularia,** sp. n. (Tab. XI. fig. 20.)

♂. Quam *R. mexicana* major. Nigra, vel fuscescens. Antennæ sicut in speciebus vicinis coloratæ. Orbitæ anguste, pronotum circumcirca, sulfureo-marginata; hoc in disco utrinque vitta obliqua transversa sulfurea. Elytra margine costali subtiliter, apice latiuscule luteo-limbata, nec non linea longitudinali discoidali in tota longitudine extensa, cum margine apicali continua, lutea. Alæ longissime caudatæ, apicem tibiarum posticarum fere attingentes, cantho dorsali et apice anguste luteo-limbatis, nec non sulco transverso luteo. Femora 1, 2 supra et subtus tibiæque intermediæ supra sulfureo-limbata. Femora postica fuscescentes, margine supero ac infero luteo-limbato, nec non extus linea longitudinali flavida; conchis basi, lobo geniculari apice, flavido-marginatis. Tibiæ flavidæ, supra brunnescentes, calcaribus et metatarso sulfureis; hoc crassiusculo, quam calcaria paulo breviore. Abdominis segmenta subtus late flavo-limbata. Segmenta dorsalia prima 5 transversa; 6^{m} et 7^{m} recondita; 8^{m} (fig.) suberectum, pentagonale (vel si mavis hexagonale), convexum, subconchoideum, sulco divisum, angulis lateralibus prominulis; margine postico luteo, angulis dentiformiter productis. Segmentum 9^{m} magnum, erectum, arcuatum, a supero in medio absconditum, lateraliter utrinque dentiformiter prominens, rufo-testaceum. Lamina supra-analis tripartita; pars intermedia minuta, supera, subrotundata; partes laterales ramos 2 elongatos deplanatos angustos (*u*) arcuatos, supra sulcatos, ad inferum curvatos, efficiens; (binos forcipem formantes). Cerci (*c*) et appendices anales (*a*) sat minuti, crassiusculi, acuminati, nigri; his secundo articulo ovato. Lamina infra-genitalis subparabolica apice subtrilobata.

♂. Long. corp. 5·8, cum alis 10 millim.

Explanation of fig. 20.—The 8th and 9th dorsal segments of the abdomen are reflexed upwards, as in the 9th segment of *R. cyanipennis* (Tab. XI. fig. 22). The 8th segment is broadly trapezoidal, with a wide notch placed between two acute little lobes. The 9th segment (9) is corneous, opened, and raised, shell-like. In the middle under its margin appears the small supra-anal plate, which projects beneath two long processes (*u*), both being flattened and sulcate, curved downwards at the tip. The cerci (*c*) and anal appendages (*a*) are short, and when seen from above appear to be conic; the anal appendages when seen from the side are more rounded; the infra-genital plate (*i*) is parabolic and somewhat trilobed at the tip.

Hab. COLOMBIA (*Mus. Genavense*): probably extending to the Isthmus of Panama.

Closely resembling *R. cyanipennis* in coloration, but smaller and well distinguished by the form of the supra-anal forceps.]

6. **Rhipipteryx limbata,** Burm.

Xya limbata, Burm. Handb. d. Ent. ii. p. 742. 5 (1839).

Rhipipteryx limbatus, Walk. Cat. Brit. Mus. Dermapt. Salt. etc. i. p. 8. 3.

Rhipipteryx limbata, Sauss. Miss. Scient. Mex., Orthopt. 356. 1.
Rhipipteryx marginatus, Serv. Orthoptères, p. 317. 1 (syn. excl.).

♀. Nigra, subvelutina. Antennæ apice, nec non articulis 1°–4° supra, sulfureis. Oculi prominuli. Orbitæ magna parte pronotumque circumcirca, sulfureo-limbata. Elytra longiuscula, margine suturali anguste, margine apicali latius sulfureo-limbatis. Alæ longe caudatæ, sulco transverso et margine dorsali medio, sulfureis. Femora anteriora antice linea longitudinali, reliqua extus margine supero ac infero, tibiæque intermediæ margine supero, sulfureis. Lobi geniculares femorum posticorum sulfureo-limbati. Tibiæ posticæ nigræ, calcaribus et metatarso sulfureis; hoc $\frac{3}{4}$ longitudinem calcarium æquante. Abdominis segmenta subtus sulfureo-limbata. Appendices anales nigri, 2° articulo ovato.
♂. Orbitæ totæ, palpi, femora antica intus marginibus binis, coxæ 1, 2 antice, trochanteres intermedii subtus, sulfurei. Appendices anales apice lutei.
Var. Corporis picturæ albidæ.
♀. Long. corp. 8·5, cum. alis 11·5 millim.
♂. Long. corp. 6, cum alis 10·5 millim.

Hab. NICARAGUA, Chontales (*Janson*).—SOUTH AMERICA, Cayenne (*Mus. Genavense*).

7. **Rhipipteryx hydrodroma**, sp. n.

♀. *R. limbatæ* simillima; differt ab illa ut sequitur. Leviter cœrulescens. Orbitæ anguste, vel vix luteo-limbatæ. Scutellum faciale flavo-bimaculatum. Femora anteriora et intermedia late luteo-limbata vel fere tota lutea. Tibiæ intermediæ supra latiuscule luteæ. Femora posteriora superne haud luteo-limbata, sed lobis genicularibus totis flavis. Tibiæ posticæ fusco-ochraceæ; calcaribus quam in *R. limbata* brevioribus; metatarsus itaque illis sensim æquilongus, sulfureus. Appendices anales inferi validi, articulo secundo compresso, ovato.
♀. Longitudo corporis 9, cum alis 11·5 millim.

Hab. NICARAGUA, Chontales (*Janson*).—SOUTH AMERICA.

Approaches *R. circumcincta*, Sauss. (Miss. Scient. Mex., Orthopt. p. 358. 4), from South America, but more handsomely marked.

8. **Rhipipteryx mexicana**, Sauss. (Tab. XI. figg. 8–19.)

Rhipipteryx mexicana, Sauss. Rev. et Mag. Zool. 1859, p. 316; Miss. Scient. Mex., Orthopt. p. 359. 7.

Minuta, nigra; pictura variabili. Antennæ articulis 1°–4° supra flavis, subtus fuscis, 6°–9° flavis, ultimis 2 nigris vel fuscis. Orbitæ partim, pronoti margines laterales et posterior, femorum intermediorum margo inferior, tibiarum intermediarum margo superior, femorum posticorum margo superior ac inferior alarumque linea marginalis, citrini. Pronotum antice macula elongata rufa. Pedes antici rufescentes, vel intus testacei. Femora postica intus testacea, extus concha rufescente, lobo geniculari flavo. Tibiæ et tarsi postici brunnei, fulvescentes; metatarso elongato gracili, calcaribus subæquilongo.
Var. *a*. Pedes antici latere interno tibiæque posticæ saltem subtus flavicantes, calcaribus supra flavidis.—*b*. Antennæ articulis 5°, 9°, 10° atris.
♀. Facies plana (fig. 15).
♂. Facies inter antennas vitta transversa scrobiculata flava, impressionibus 1–3 nigris (fig. 16).
♀. Long. corp. 6, cum alis 6·6 millim.
♂. Long. corp. 5·5, cum alis 6·6 millim.

FIGURES.—For the explanation of the numbers, see *anteà*, p. 201, nota.
Fig. 8. The extremity of the abdomen, ♀, to show the homology of the different parts. The 8th dorsal segment is divided into two separate lobes. The 9th dorsal segment is not visible, but concealed under the 8th. The 10th segment has three parts: two, transverse, enveloping the base of the cerci (*c*); and one, median, elongate, compressed and canaliculated, forming the supra-anal plate or superior valvula of the anus.

The two inferior valvulæ of the anus (visible in fig. 10) bear the anal appendages (*a* 10). Under these organs are visible the four corneous valvæ of the short ovipositor, which have been separated from each other: the two inferior valvæ (8 *u*) formed by the membranous appendix of the 9th ventral segment; and the two superior valvæ (9 *b*, 9 *o*) formed by the appendix of the 8th ventral segment.—Fig. 9. Shows the same parts seen from the side—8 *i*, the infra-genital plate, an appendage of the 8th ventral segment.—Fig. 10. Shows the same parts seen from above as in fig. 8, but opened and dissected. The three parts of the 10th dorsal segment are removed from each other; the basal part (*s*) surrounding the base of the cerci is parted in the middle; the median part (the true supra-anal plate or telson) is opened, and shows its real ovoid shape. The anal appendages (*a*), removed outwards, show at the base the inferior valvulæ of the anus; they appear as if biarticulated, but they are only incompletely so; *i*, the intestinal tube.—Fig. 11. The same parts as in fig. 8, seen from below, the four valvæ of the ovipositor being separated.—Fig. 12. The extremity of the abdomen of the male seen from the side: 9 *i*, the 9th ventral segment or infra-genital plate.—Fig. 13. The same as fig. 12, seen from above: *vs*, the supra-anal plate (separated into three parts).—Fig. 14. The same as fig. 12, seen from beneath.—Fig. 15. The head of the female seen from in front.—Fig. 16. The head of the male, to show the curious swelling which occupies the face between the antennæ.—Figg. 17–19. The parts of the mouth: 17, labium; 18, part of a maxilla; 19, mandible.

Hab. MEXICO, Oaxaca (*Saussure*).

The following forms are difficult to separate from this, and they may perhaps be regarded as mere varieties. *R. mexicana* is somewhat smaller and more slender than either of them, and it has the posterior metatarsus a little longer; except this difference, which may be due to the fact that our typical specimens are from a more northern region (plateau of Mexico), the following differ from each other only by their coloration:—

8 *a*. R. FRATERNA, n. n.—*R. mexicanæ* simillima at paulo major; nigra, citrino-picta. Pedes antici latere interno flavicante; tibiæ posticæ subtus, calcaribus supra, flavidis. Metatarsus posticus crassior, magis fusiformis, calcaribus paulo brevior.— *Var.* Antennarum pictura leviter variabilis.

Var. *rufescens*. Color insecti toti ad rufum vergens, vel ipse omnino rufus, picturis tamen illis typi similibus. Antennæ rufæ, articulis intermediis luteis.—Long. corp. 5·3, cum alis 6·7 millim.

♀. Facies ut solitum plana, utrinque macula flava.

♂. Facies (fig. 16) vittam transversam tumidam, scrobiculatam flavam, obferens, impressionibus 3 nigris. (Frons inferius ad scutellum faciale prominula, utrinque per impressionem vel sulcum infra-ocularem delineata, in medio margine pago minimo subexcavato. Scutellum faciale superne vitta transversa tumida flava subtus utrinque sinuata, in medio leviter producta ac impressione nigra notata.)

Hab. MEXICO, Atoyac in Vera Cruz (*H. H. Smith, Schumann*), Orizaba (*F. D. Godman*); GUATEMALA, Purula in Vera Paz (*Champion*).

8 *b*. R. TRICOLOR, n. n.—*R. mexicanæ* staturæ et illi formis simillima, pictura tamen valde discrepans:—Nigra, antennæ ejusdem picturæ quam in *R. mexicana*. Palpi, orbitæ partim, maculaque utrinque faciei, albidi. Pronotum circumcirca albido-limbatum, vitta longitudinali postice incompleta rufo-aurantia. Elytra angustissime alarumque campus opacus subtiliter, luteo-limbata. Pedes aurantiaci, genibus intermediis, tibiis 1, 2 apice, nec non tarsis, nigris. Coxæ 1, 2 antice luteæ vel luteo-maculatæ. Femora postica in concha vitta arcuata nigra; tibiis et tarsis flavis; metatarso quam calcaria leviter breviore. Appendices anales primo articulo gracili, secundo ovato, apice puncto nigro.— ♂. Facies infra antennas vitta transversa scrobiculata flava.—Long. corp. 5·6, cum alis 6·2 millim.

Var. *a*. Tibiæ 1, 2 apice haud nigræ.—*b*. Pronoti discus immaculatus. Tibiæ intermediæ subtus nigro-limbatæ. Femora postica apice maculis 2 nigris.—*c*. Abdomen subtus rufescens.

Var. *saltator*.—Pronoti discus immaculatus. Antennæ totæ nigræ, articulis 2°–4° flavo maculatis. (Costa Rica.)

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); COSTA RICA, Caché (*Rogers*).

The very peculiar coloration of this insect might induce us to regard it as belonging to a separate species.

9. **Rhipipteryx biolleyi,** sp. n.

Minuta, atra. Antennæ sulfureæ, articulis 2°–6° subtus ultimisque omnino, nigris. Caput antice utrinque linea longitudinali, maculaque postoculari ad antennas, flavis; palpis labialibus flavo-annulatis. Pronotum circumcirca anguste flavo-limbatum. (Elytra et alæ breviusculæ, in requiete margine dorsali subtiliter flavo-limbato; elytra vix ad concham genicularem femorum posticarum attingentibus; alæ vix ad tertiam partem tibiarum extensæ.) Pedes antici breviusculi, robusti, testacei, femoribus et tibiis supra et utrinque fuscis; tibiæ latere interno latiuscule foveolatæ, apice distincte 3-spinosæ. Pedes intermedii nigri, femoribus subtus, tibiis supra, flavo-marginatis. Tarsi fusci. Femora postica subtus lutescentia, lobis genicularibus externis flavo-marginatis; tibiæ fusco-testaceæ, basi, subtus et apice, luteis, calcaribus superis flavidis; calcaria infera metatarsusque sensim æquilonga, gracilia; metatarso apice attenuato. Abdomen nigrum, cercis nigris; appendicibus analibus ♂ longioribus, compressis, parallelis, flavis.

Long. corp. 5, cum alis 6·5 millim.

Var. *a*. Femora postica subtus læte testacea, margine supero subtiliter sulfureo-limbato; abdomine apice utrinque margine sulfureo.—*b*. Antennæ variabiliter flavo et fusco variæ.

Hab. COSTA RICA, San José (*Biolley, in Mus. Genavense*).

Var. *intermedia*.—Antennæ nigræ articulis 2 flavis. Pedes nigri. Coxæ et femora antica subtus testacea. Femora postica nigra, margine infero toto vel apice flavo; tibiæ supra brunnescentes. Metatarsus quam calcaria paulo brevior, conicus; omnia flava. Abdomen subtus haud flavo-fasciatum. Pictura de reliquo illæ typi similis. ♀ ♂.

Hab. COSTA RICA, Volcan de Irazu 6000 to 7000 feet (*Rogers*).

10. **Rhipipteryx scrofulosa,** sp. n.

Nigra. Antennæ nigræ, articulis 1° apice, 2°–4° supra, 7° toto, flavis. Pronotum circumcirca late citrino-limbatum. Elytra cantho dorsali late, alæ subtiliter, citrino-marginata. Femora 1, 2 flava, genibus nigris; tibiis flavis, subtus nigro-limbatis. Femora postica nigra, margine infero anguste citrino-limbatis (supra ante concham vitta transversa rufa), concha vitta arcuata flava; tibiæ posticæ brunnescentes.—♂. Faciei tumefactio crassa, convexa, nec scrobiculata, nec foveolota, superne late sinuata, tota flava. Appendices anales grandes, 2° articulo elongato-ovato, flavo, supra apice nigro-limbato.

♂. Long. corp. 5·5, cum alis 7 millim.

Hab. MEXICO, Rincon in Guerrero (*H. H. Smith*).

One male.

11. **Rhipipteryx pulicaria,** sp. n. (Tab. XI. fig. 24.)

Minima, nigra. Antennæ flavæ, articulis ultimis nigris, articulis primis frequenter brunnescentibus. Caput supra et pronotum dense fulvo-punctata, vel minute nigro- et fulvo-marmorata. Elytra prope basin vitta obliqua apiceque anguste flavis. Alæ breviter caudatæ, infuscatæ, cœruleo-nitentes. Pedes antici artubus testaceis, femoribus supra flavo-lineatis; tibiis supra apice flavicantibus. Pedes intermedii femoribus et tibiis supra maculis 2 flavis; illis subtus apice linea flava. Femora posteriora extus confertim impresso-punctata superne transverse strigata, margine supero apice punctis 1–2 flavis. Tibiæ extus brunneæ, intus flavicantes marginibus pilosis. Calcaria flava, subtus et apice brunnea. Metatarsus flavus, tertiam partem calcarium vix æquans. Abdominis segmenta anguste flavo-limbata, subtus in medio, saltem prima, flava. Cerci et appendices anales nigri, his ♀ 2° articulo ovato.

Long. corp. 3–4, cum alis 4·1 millim.

Var. *a*. Antennæ nigræ, apice flavo (♂).—*b*. Pronotum fulvescens vel etsi maculis nigris majoribus notatum.—*c*. Tibiæ posticæ flavicantes, supra fuscæ.
♀. Elytra et alæ breves vel breviter caudatæ.
♂. Elytra longiora; alæ breviter caudatæ.

Hab. MEXICO, Dos Caminos in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

Var. *peruviana*.—Brunnea vel fusco-fulvescens, immaculata. Antennæ concolores, articulis 5°–8° testaceis. Caput fuscum. Pronotum fusco-fulvum (maculis nonnulis obsoletissimis brunneis, seu obsoletissime brunneo-marmoratum) nonnunquam marginibus lateralibus angustissime pallidioribus. Elytra brevia, fusca vel nigra, cantho dorsali et linea anali obsolete fulvo-brunneis. Femora antica intus fulvo-bilineata, intermedia obsolete fulvo 3-fasciata; tibiæ saltem intus testaceo-variæ. Femora postica nigra vel fusca, area supera obsolete transverse fulvo-lineolata, area externa nonnunquam lineis longitudinalibus 1 vel 2 fulvescentibus; lobo geniculari testaceo. Tibiæ fuscæ, subtus pallidiores, calcaribus et metatarso flavis; hoc fere dimidiam longitudinem calcarium æquans. Abdominis segmenta subtus fusco-testaceo-limbata. Appendices anales fusci.

Hab. PERU, Tarma (*Mus. Genavense*: 2 ♀).

Tribus GRYLLINÆ.

Grylliens, Saussure, Mél. Orth. 5ᵉ fasc. p. 226; Miss. Scient. Mex., Orthopt. p. 379.

In this and the following tribes the neuration of the elytra of the males affords important characters for the separation of the genera and species, in most of which nearly the whole organ is modified in a very extraordinary way, to form a musical instrument. It is thus necessary to make perfectly clear the nomenclature of the nervures of the elytra (*vide* Tab. XIII.*).

In all the Gryllidæ, except the Tridactylinæ, the elytra are divided into two fields: the *lateral* and the *dorsal*. The latter is formed by the discoidal and the anal fields being united into one, and lying flat on the back of the insect. The two parts of the elytra are separated by a more or less sharp ridge formed by the two principal veins. The first part is formed by the *humeral vein* (*vena humeralis*); but this deflexes laterally at its middle, and it is the *discoidal vein* (*v. discoidalis*) which continues the ridge in its second part. The *medial vein* (*v. media*), nearly contiguous to the discoidal vein, rests on the back and belongs only to the dorsal field.

The lateral field contains:—*a*, the *mediastinal vein*, parallel to the ridge of the elytron; it is simple or (more generally) ramose;—*b*, 3–4 free veins, quite at its base, generally short (except in the Trigonidinæ).

* Explanation of the neuration of the elytra of the males when provided with a drum (*vide* Tab. XIII. figg. 9, 21, 22, 23):—*h*, vena humeralis.—*d*, v. discoidalis.—*m*, v. media.—*a*, v. analis.—*A*. v. stridulans (scil. pars stridulans venæ analis).—*a'*, v. postanalis (continuatio venæ analis).—*x*, *x'*, *x''*, venæ axillares.—*z*, *z'*, *z''*, v. postaxillares (continuatio venarum axillarium).—*n*, nodus analis vel musicus.—*b*, *b'*, v. diagonalis (ulnaris).—*l*, stigma.—*s*, speculum.—*i*, v. involvens.—*r*, area apicalis.—*v*, *v'*, venæ obliquæ et venæ transversæ.—N.B. Fig. 9, the punctured line of the posterior *z* reaches too far.

Females (Tab. XIII. fig. 18).—On the dorsal field are:—*a*, the *medial* vein (*m*), next to the ridge, generally rather slender and furnishing at its extremity a few short apical branches;—*b*, the *ulnar* vein (*u*), furnishing often three obliquely pectinated branches;—*c*, the *anal* vein, oblique;—*d*, 2–3 *axillary* veins, terminating, like the *anal* vein, on the inner margin (*margo suturalis*) of the elytron.

Males.—In some genera there does not exist a musical organ, and in this case the male elytra do not differ from those of the females.

But in most of the Gryllidæ the musical organ is extremely well developed in the males, and the elytra, except their apex and base, are converted into a tambourine. The membrane is no longer rough, but transparent and parchment-like, not only on the dorsal, but also on the lateral field. In the lateral field the nervures are the same as in the females, but the *vena mediastina* bears a greater number of branches, and these often take a sigmoidal curve. When the females possess a simple mediastinal vein, the males of the same species have at least one (apical) branch. In the dorsal field the nervures are so much deflexed that it is not possible to recognize them except by a special study. I have given their nomenclature in a footnote on p. 216, and will now endeavour to explain their homology.

Homology.—All the longitudinal veins of the discoidal field, except the *vena media*, instead of being straight, are angularly broken before the middle and deflexed inwards nearly up to the sutural margin of the elytron.

The *vena analis* (*a*, *a'*) forms thus a right or obtuse angle, and becomes more or less transverse, to form the stridulating part (*A*), and then becomes longitudinal again (*a'*). The other nervures follow the same direction. The transverse part of the *v. analis* (*A*) is much thickened, prominent on the inferior side of the elytron, and is furnished with rugosities like a file. It is by rubbing these rugosities against the inner edge of the other elytron that the insect produces its musical sounds. This part of the anal vein has been named by Goureau *archet* (bow) (*plectrum*, Sss.) †. It is, indeed, exactly like a fiddle-bow in its constitution and mode of action. As the right elytron in the ordinary position covers the left elytron, it is generally the right which produces the sounds by rubbing on the left one; but the elytra can be indifferently superposed at the will of the insect, and the left elytron sometimes rubs against the right ‡.

The three *axillar veins* (*x*, *x'*, *x''*) run obliquely to the sutural margin. The first two (*x*, *x'*) converge generally into a single short nerve, which is anastomosed with the inner end of the *vena stridulans* (A); the fusion of these veins forms a corneous knot (*nodus analis*) (*n*), which furnishes a solid support for the end of the vena stridulans

* On fig. 9 the dotted line of the inferior *z* has been made too long, going through to the speculum.

† *Vena stridulans*, Brunner v. W. (in the Locustidæ).

‡ Probably with the object of producing different sounds.

and for all the nervures of the tympanum. After having thus been fused together, the three nerves separate again and become longitudinal. The *v. post-analis* (*a'*) is the continuation of the *v. analis* (*stridulans*); it is often united to the *v. diagonalis* or to the *speculum* by from 1–3 venulæ. The first and second *v. post-axillares* (*z*, *z'*, fig. 9) are the continuation of the first two *venæ axillares* (*x*, *x'*, fig. 22). The third *v. axillaris* (*x''*) is not deflexed like the preceding veins, but becomes quite marginal (*z''*), and extends along the sutural margin of the elytron; before it reaches the *anal knot* it is somewhat thickened and forms the inner margin of a sort of conchoid excavation, the latter being more or less corneous, but with a small membranous area. This peculiar organ, called by Goureau *chanterelle* (*illex*), is the generator of the sounds, as proved by the fact that it is on its margin that the archet rubs and produces the vibrations, which, through the anal knot, are carried to the nerves of the whole tambourine. The little musical field is of a different form: it is much developed and conchoid in the Gryllinæ, but becomes very narrow and but slightly apparent in the Eneopterinæ *.

The *vena diagonalis* (*b*) has a less evident homology. It must be identified with the *v. ulnaris*, by supposing that it has been deflexed and broken angularly together with the *v. analis*. Indeed, the proximal part of this vein, pressed against the *v. analis*, has disappeared, and seems to have fused with the *vena stridulans* †, so as to make this thicker and more robust; and it only emerges again before the knot. The *v. diagonalis* is a strong vein, supporting the *speculum* (*s*), which is an important drum.

The *speculum* (figg. 9, 21, *s*) results from the bifurcation of the diagonal vein. Its outer margin (*b'*) is formed by the apical part of this vein, which posteriorly curves into an elliptic form. Its inner margin is formed by the first branch of the diagonal vein, which joins the end of the nerve of the outer margin (*d*), so as to close the field. The speculum is parted transversely by a second branch of the v. diagonalis, sometimes by two branches; in rare cases by numerous branches of arched form (Tab. XII. fig. 4). The speculum as described is anteriorly angulate (fig. 21), but often takes an ovate form (fig. 9); its outer angle is anastomosed with the *v. media* (*m*) to form the *stigma* (*l*). The *venæ post-analis* (*a'*) and *post-axillares* (*z*, *z'*) anastomose together at their extremities (fig. 9), forming closed elongate cells. The *vena involvens* (fig. 9, *i*) is very irregular. It may be formed by the prolongation of the *v. media* (*m*) through

* If the *v. stridulans* is to be compared to a fiddle-bow, the 3rd *v. axillaris* (*x''*) on which the bow rubs, and also the *venæ post-analis* and *post-axillares* emerging from the anal knot, should be compared to the chords or strings of the instrument. Nevertheless, I must abandon the term *chords* or *strings* in order to avoid confusion.

† This appears to me to be the more certain, as in the females the ulnar vein has often a common origin with the anal vein (figg. 6, 18).

the stigma, by the prolongation of the third *v. post-axillaris* (fig. 9), or even by the crossing of the two branches of the *v. diagonalis* (*b*) which form the speculum (fig. 21). It is very variable, forming often one, two, or three cells, through its occasional anastomosis with the margin of the speculum.

The *area apicalis* (*r*) is unmodified, and does not belong to the tambourine. It is formed by the apical branches of the *v. media* (*m*), the last three or four of which are strongly curved inwards, the base of these branches being turned back by the speculum, and the preceding two or three branches emerging from the *v. involvens* (*i*), the bases themselves being confused with this vein. But in consequence of the variability of the anastomoses and of the cells, the apical branches of the v. media seem sometimes to belong to the extremity of the post-anal veins.

Adventitious musical veins (*venæ obliquæ* and *venæ transversæ*).—The homologies of all the normal veins as modified in the male elytra are thus explained, but there are still in the tambourine of the males other musical veins (*v*), occupying the large discoidal cell, between the v. diagonalis and the v. media. These nervures are to solidify this cell, and, besides emerging directly from the *v. stridulans*, they receive probably special vibrations. They afford useful characters to the systematist by their number, direction, and form, and are characteristic of the tribes and through the tribes of the genera, as will be shown below. They are of two different types :—

(a) *Venæ obliquæ*, sensu stricto.—These nervures exist in variable number, extending more or less obliquely from the *vena stridulans* to the *v. media*; the posterior (inner) one anastomoses sometimes at its base by an arch with the *v. diagonalis* (fig. 9, *v*); often they anastomose all together at their base by such arches, and are united to the *v. stridulans* by adventitious reticulation. In addition, there are often at the outer angle of the *v. stridulans* or *v. analis* (*a*) a few very short, rudimentary, *false oblique veins* (Tab. XII. fig. 14), which may be taken as the homologues of the transverse venulæ of the normal reticulation, and which do not belong to the drum. But the limit between them and the real *oblique veins* cannot well be defined.

(b) *Venæ transversæ*.—These are never more than two in number, and they are found only in a few genera of the group Eneopterinæ, and give to the tambourine a very typical character. In this type the *venæ obliquæ*, as described, do not really exist, except a rudiment of the last one forming the arch which unites it to the base of the diagonal vein (figg. 22, 23). They are replaced by two *transverse veins* (*v*), which are anastomosed with the base of the single rudimentary *oblique vein*.

The true *oblique veins* I consider to be purely adventitious. There is nothing homologous to them in the elytra of the females. They (fig. 9, *v*.) appear to be formed by foldings of the membrane of the large ulnar cell. Indeed, in some species, the membrane of the large cells becomes striated or somewhat folded, showing a tendency to form adventitious nervures (fig. 29). The form, direction,

and number of the *venæ obliquæ* must thus have been determined by the knots (lines) of the vibrations of the membrane *.

The two *transverse veins* (figg. 22, 23, *v*) must have a different origin, for they are placed at the base of the tympanum, where the membrane is scarcely modified, and therefore does not produce a musical sound. Their direction is precisely the opposite to that of the true *venæ obliquæ*, and two suppositions are possible: *a*. They might be regarded as an extra development of two transverse venulæ of the reticulation [*vide* fig. 18, the venulæ at the base of the elytron joining the *v. ulnaris* (*diagonalis*) and the *v. media*]; *b*. Or, they might be considered as formed by the last two (inner) *venæ obliquæ* (fig. 9, left to *v*) broken at right angles at their base, and rejected transversely to the *v. media*. This modification must of course produce a special kind of sound.

In a general way, it may be said that the tambourine of the male elytra is a musical instrument, each tribe of Gryllidæ possessing a different sort of fiddle, and that in each tribe the genera present varieties of their typical fiddle, producing a somewhat different note. It must therefore be admitted that the characters afforded by the musical organ are of great importance in determining the systematic position of the species.

In the tribe Gryllinæ the *venæ obliquæ*, 2–6 and more, are obliquely transverse, and the venæ *post-analis* and *post-axillares* are arched. The genus *Nemobius* presents an exception to these characters, in consequence of the small size of the species: the tambourine is somewhat incomplete, having only one *vena obliqua*, which is longitudinal and nearly parallel with the *speculum*, often abbreviated or obsolete.

Synopsis generum.

1. Metatarsus posticus superne nec sulcatus, nec serratus. Tibiæ anticæ in latere externo foramine instructæ.—NEMOBIUS, Serv.

1, 1. Metatarsus posticus superne sulcatus, biseriatim spinulosus.

2. Tibiarum posticarum calcar superum quam intermedium distincte longius. Tibiæ posticæ breviores. (Tibiæ anticæ in latere externo tympano distincto instructæ.) (Stirps *Brachytrypus*.)

3. Ocelli in trigonum dispositi. Ovipositor rudimentarius.—ANUROGRYLLUS, Sss.

3, 3. Ocelli in lineam transversam dispositi. Ovipositor variabilis.—BRACHYTRYPUS, S.

2, 2. Tibiarum posticarum calcar superum quam intermedium brevius vel illo æquilongum (vel sublongius).—(Stirps *Gryllus*.)

3. Tibiæ anticæ in utroque latere foramine instructæ; foramine externo oblongo, interno minore.

4. Species majores. Elytra ♀ in dorso areolis rhomboidalibus reticulata; ♂ tympani *venis obliquis* 3–4; vena mediastina ♀ ♂ ramosa.—GRYLLUS, L.

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* Somewhat similar to what occurs when the skin of a tambourine, sprinkled with fine sand, is made to emit a sound by rubbing its frame with a bow: the sand, agitated by the vibration, groups into different lines and figures, formed by the interference of the sonorous waves.

4, 4. Species minutæ. Elytra ♀ in dorso venis longitudinalibus areolisque quadratis reticulata; ♂ tympani *venis obliquis* tantum 2; vena mediastina ♀ indivisa, ♂ uniramosa.—Miogryllus, Sss.

3, 3. Tibiæ anticæ in latere interno foramine nullo. Elytra frequenter valde abbreviata, ♀ in dorso venis longitudinalibus instructa; vena mediastina ♀ indivisa, ♂ uniramosa.—Gryllodes, Sss.

NEMOBIUS, Serv.

Nemobius, Serville, Hist. Nat. des Ins. Orthoptères, p. 345 (1839), et auctores.

A genus including small species of brown or brownish-testaceous colour, with variable markings. Some species have long, caudate wings; others do not possess hind wings, and have abbreviated elytra. The principal specific characters of the species, apart from this, are to be found in the form of the ovipositor—straight or somewhat curved,—and in the denticulation of the end of its superior margin.

Synopsis specierum.

a. Ovipositor rectus, femori postico sensim æquilongus.
b. Major, elytris completis.—1. *fasciatus*, De G.
bb. Minor, elytris abbreviatis, abdomen liberantibus.
c. Ovipositor apice subtiliter denticulatus.—2. *hastatus*, sp. n.
c, c. Ovipositor apice haud denticulatus.—3. *distinguendus*, Sc.
aa. Ovipositor femori postico valde brevior, subarcuatus.
b. Ovipositor gracilis, arcuatus, apice subtiliter denticulatus.—4. *cubensis*, Sss.—5. *comanchus*, sp. n.
bb. Ovipositor crassiusculus, brevior:
c. apice crasse denticulatus. Elytra completa.—6. *neomexicanus*, Sc.
c, c. apice tenuiter denticulatus. Elytra ♀ abbreviata, abdomen liberantia.—7. *toltecus*, Sss.—8. *mexicanus*, Walk.
aaa. Ovipositor femori postico valde longior.—9. *ensifer*, Sc.

1. **Nemobius fasciatus**, De Geer.

Gryllus fasciatus, De Geer, Mém. Ins. p. 522. 5, t. 43. fig. 5 (1773).
Nemobius fasciatus, Scudd. Bost. Journ. Nat. Hist. vii. p. 430. 3 (1862); Journ. N. York Ent. Soc. iv. p. 102; Sauss. Miss. Scient. Mex., Orthopt. p. 389. 10; Mél. Orth. 5e fasc. p. 242.
Var. *a.* Alis abortivis, *N. exiguus*, Say, Scudder; Sauss. l. l.—*b.* Alis elytrisque abbreviatis, *N. vittatus*, Harris, Scudd.; Sauss. l. l.
Long. corp. 9·2; cum alis 16; femor. post. 7; ovipos. 6 millim.

Hab. North America, United States.—Mexico, Teapa in Tabasco (*H. H. Smith*).

A North-American species, extending southwards to the hot regions of Mexico.
The single specimen found at Teapa is a small female, with long wings.

2. **Nemobius hastatus,** sp. n.

♀. Statura minuta *N. cubensis*; niger, pedibus flavo-variegatis; antennis fuscis; pronoto marginibus flavo-punctatis. Elytra abbreviata, abdominis segmenta 2 tegentia, nigra, vitta humerali flavida. Metatarsus posticus quam articuli 2 reliqui tarsi haud duplo longior. Alæ nullæ. Ovipositor rectus, femori postico subæquilongus, subtus linea flavida limbatus, apice subtiliter denticulatus.

Long. corp. 7; elytra 3; femor. post. 5; ovipos. 4·5 millim.

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer*).

This species is somewhat analogous to the var. *vittatus* of *N. fasciatus*, but it is very much smaller. The black colour may not be constant.

3. **Nemobius distinguendus,** Scudd.

Nemobius distinguendus, Scudd. Journ. N. York Ent. Soc. iv. p. 101 (Sept. 1896).

N. hastato simillimus, fere eadem pictura; nigro-castaneus; pedibus luteo-marmoratis. Differt a specie laudata: statura majore; capite ad oculos linea testacea ornato; elytris paulo longioribus, testaceis; ovipositoris valvis apicalibus brevioribus, haud denticulatis.

♀. Long. corp. 10; fem. post. 6·9; ovipos. 7 millim.

Hab. Mexico, Orizaba (*Scudder*).

4. **Nemobius cubensis,** Sauss.

Nemobius cubensis, Sauss. Miss. Scient. Mex., Orthopt. p. 384. 2, t. 7. fig. 5.

♂. Alis abortivis.

Long. corp. 7; femor. post. 4·7 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

Alis caudatis.

Hab. Mexico, Cordova (*Saussure*).—Cuba (*Saussure*).

This species is frequently more or less testaceous in colour; sometimes it is brown, in Mexico as well as in Cuba. The Mexican specimens are somewhat smaller than those from Cuba. It differs from *N. neomexicanus* in having the ovipositor more slender and very finely denticulated at the tip, with numerous denticulations. A fuscous variety from Cuba often has the elytra marked as in *N. comanchus*.

5. **Nemobius comanchus,** sp. n.

♀. *N. cubensi* paulo major, fulvo-flavus, fusco-pilosus. Caput supra et pronotum brunneo-umbrata. Elytra fere abdominis longitudine, fusca, vitta humerali lutea. Alæ longe caudatæ. Tibiæ anticæ tympano magno instructæ. Femora postica obsoletissime brunneo-marmorata. Abdomen supra infuscatum. Cerci brunnescentes. Ovipositor subrectus, femori postico longitudine plusquam $\frac{2}{3}$ æqualis, apice subtiliter denticulatus.

Var. *a*. Elytra in area externa campi dorsalis lineolis transversis 3–4.—*b*. Verisimiliter elytris omnino fuscis.

Long. corp. 8; cum alis 14·5; elytra 6; femor. post. 5·2; ovipos. 3·8 millim.

Hab. Mexico, States of Durango and Sinaloa (*Forrer*).

Distinguished from *N. cubensis* by its size, and by the tympanum of its anterior tibiæ being somewhat larger, in the shape of an elongated ellipse.

6. **Nemobius neomexicanus,** Scudd. (*N. denticulatus*, Tab. XI. fig. 25.)

Nemobius neomexicanus, Scudd. Journ. N. York Ent. Soc. iv. p. 104 (♂ ♀) (Sept. 1896).

Fuscus, vel fusco-testaceus, fusco-setosus. Palpi venterque testacei. Pronoti lobi laterales fusci, quadrati, margine infero exciso. Elytra fusca, abdominis longitudine vel breviora, lateraliter 4–5 venosa, fascia humerali testacea. Alæ longissime caudatæ. Pedes testacei, fusco-annulati, vel umbrati; metatarsis elongatis; femoribus posticis crassiusculis; tibiis longissime 4 : 4 spinosis, ad spinas maculis fuscis; calcare supero-interno $\frac{3}{4}$ metatarsi æquante; metatarsus posterior quam reliqui 2 articuli tarsi duplo longior. Cerci obscuriores.

Var. *a*. Minor, capite minore; colore pallidiore.—*b*. Minor; elytris abbreviatis, tantum dimidium abdomen tegentibus, coriaceis; alis nullis.—*c*. Pronoto superne fulvescente.

♀. Ovipositor (fig. 25) femori postico fere duplo brevior, sat validus, subrectus, compressus, parte apicali compresso-lanceolata, acuta, margine supero crasse denticulato, dentibus erectis, acutis.

♂. Elytri tympanum completum, speculo latiusculo, antice obtusangulato, postice areolas 2 præbente.

♀. Long. corp. 8·5; pronot. 1·9, latit. pron. 2·6; elytr. 5; femor. 6; ovipos. 3·5 millim.

♀ *var.* Long. corp. 6·5; pronot. 1·4, latit. pron. 2·1; elytr. 3; femor. 5; ovipos. 2·4 millim.

♂. Long. corp. 8·2; pronot. 1·9, latit. pron. 3; elytr. 5; femor. 6 millim.

Hab. NORTH AMERICA, Carolina, Dallas in Texas (*Boll*), New Mexico, California, Lower California (*Scudder*).—MEXICO, States of Durango and Sinaloa (*Forrer*), Teapa in Tabasco (*H. H. Smith*).

This species is characterized by the strong denticulation of the upper edge of the apical valvæ of the ovipositor, which bears about four rough indentations and three teeth directed upward. The facies is that of *N. vittatus*, Harr., but the insect is smaller, the ovipositor is one-half shorter and subincurved, and the lateral margins of the pronotum are more strongly notched. The tympanum of the elytra (♂) is regularly formed, and the posterior cells of the inner part are elongate and parallel. The insect is closely allied to *N. lineolatus*, Duf., and *N. longipennis*, Sss.; but it has the ovipositor more strongly denticulate, although much less so than in *N. araucanus*, Sss., in which the denticules form regular little spines with the ends somewhat curved *.

7. **Nemobius toltecus,** Sauss.

Nemobius toltecus, Sauss. Rev. et Mag. Zool. xi. p. 316 (1859); Miss. Scient. Mex., Orthopt. p. 386. 7 (♀); Scudd. Journ. N. York Ent. Soc. iv. p. 106 (Sept. 1896).

♀. Statura media, inter illam *N. fasciati* et *N. cubensis* incidens; brunneo et fulvo, saltem in pedibus, variegata. Antennæ basi rufescentes. Caput obscure rufum, oculis parum prominulis. Pronotum et elytra in dorso fulvo-flava, lateraliter nigra. Abdomen nigrescens, fulvo-irroratum. Elytra secundum segmentum abdominis attingentia, supra basi macula nigra. Ovipositor crassiusculus, subarcuatus, $\frac{2}{3}$ longitudinem femoris æquans, valvis distincte confertim sed haud crasse denticulatis (denticulis brevibus obtusis), apice acutus.

♂. Elytra abdomen tegentia (*Scudder*).

Long. corp. 9·5; elytr. 3; femor. post. 6; ovipos. 4 millim.

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* Mr. Scudder's paper on *Nemobius* was not received till after the above description was in type; but I have little doubt that his *N. neomexicanus* belongs to the present species, figured by me under the name of *N. denticulatus*.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*), Tepic, Orizaba, Jalapa (*Scudder*), Oaxaca (*Saussure*).

8. **Nemobius mexicanus,** Walk.

Nemobius mexicanus, Walk. Cat. Dermapt. Salt. i. p. 57. 8 (♀) (1869); Scudd. Journ. N. York Ent. Soc. iv. p. 106 (Sept. 1896).

N. tolteco simillimus. Differt: ovipositore apice subtilissime densissime denticulato; fronte pallide lineata.—Marium elytra abdomen tegentia.

Hab. MEXICO, Jalapa, Orizaba, Minatitlan, Oaxaca.

9. **Nemobius ensifer,** Scudd.

Nemobius ensifer, Scudd. Journ. N. York Ent. Soc. iv. p. 101 (Sept. 1896).

♀. Caput convexiusculum, nigro-castaneum; occipite lineis pallidis notato; facie inferius pallida. Oculi sat prominuli. Palpi maxillares pallidi, apice oblique truncati. Pronotum fusco-castaneum. Elytra apicem abdominis superantia, fusco-castanea; alæ longissimæ. Pedes fusco-marmorati. Ovipositor quam femur post. valde longior, gracillimus, subarcuatus, valvis apicalibus elongatis inermibus, apice hebetatis.

♀. Long. 10; fem. post. 7·75; ovipos. 8·25 millim.

Hab. CENTRAL AMERICA (*Rev. T. Heyde*).

ANUROGRYLLUS, Sauss.

Anurogryllus, Saussure, Mélang. Orthopt. 5ᵉ fasc. p. 451 (1877).

A very distinct type, the ovipositor of the females being rudimentary. Spread over Tropical America, the Oriental region, and Australia.

The species of this genus being very similar, it is not improbable that *A. antillarum* and *A. abortivus*, as well as *A. muticus*, will be found to inhabit Central America.

Synopsis specierum.

a. Elytra condite explicata.—1. *muticus,* De G.
aa. Elytra abbreviata:
b. sese in dorso tegentia.—[2. *antillarum,* Sss. (Cuba).]
bb. ♀ lateralia squamiformia.—[3. *abortivus,* Sss. (Cuba).]

1. **Anurogryllus muticus,** De Geer.

Gryllus muticus, De Geer, Mém. Ins. iii. p. 520. 2, t. 43. fig. 2 (♀).
Gryllodes muticus, Sauss. Miss. Scient. Mex., Orthopt. p. 411. 1 (♀ ♂), t. 7. fig. 9 (♂).

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*), Vera Cruz and Yucatan (*Saussure*); PANAMA, Volcan de Chiriqui (*Champion*).—GUIANA; ANTILLES, Cuba, Porto Rico, Guadeloupe, Antigua.

GRYLLUS, Linn.

Gryllus, Linn. et auctores.

Synopsis specierum.

a. Ovipositor longissimus, corporis longitudine.
  b. Statura magna; elytra completa.—1. *abbreviatus*, Serv.
  bb. Statura minor; elytra valde abbreviata, dimidium corpus liberantia.—2. *neglectus*, Sc.—[3. *insularis*, Sc.]
aa. Ovipositor quam corpus brevior;
  b. femori postico sensim longior:
    c. femur ac dimidiam tibiam æquans. Statura magna.—4. *luctuosus*, Serv.
    cc. brevior at quam femur longior.
      d. Statura magna; elytris completis.—5. *assimilis*, F.
      dd. Statura minuta; elytris valde abbreviatis.—6. *chichimecus*, sp. n.
  bb. femori sensim æquilongus.—7. *mexicanus*, Sss.

1. **Gryllus abbreviatus**, Serv.

Gryllus abbreviatus, Serv. Orthopt. p. 336. 6; Sauss. Miss. Scient. Mex., Orthopt. p. 400. 6; Mél. Orthopt. 5e fasc. p. 317. 1.

Var. Pallida; capite pronotoque flavo-variegatis; elytris, pedibus cercisque fulvis. [Carolina, Northern Mexico.]

Hab. North America, United States.—Northern Mexico.

2. **Gryllus neglectus**, Scudd.

Gryllus neglectus, Scudd. Bost. Journ. Nat. Hist. vii. p. 428. 4 (1862); S. T. Smith, Proc. Portl. Soc. Nat. Hist. 1868, p. 144; Sauss. Miss. Scient. Mex., Orthopt. p. 401 (part.).

Var. ♀. Statura media. Niger; elytris valde abbreviatis, dimidium abdomen liberantibus; cantho humerali pallido; alis minimis; ovipositore longissimo.

♀. Long. corp. 16·5; elytr. 7; femor. post. 12; ovipos. 16·4 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

The specimen from Guerrero I regard as a form of *G. neglectus*, Scudd., with more abbreviated elytra, *G. neglectus* itself being probably a variety of *G. pennsylvanicus*, Burm.

[3. **Gryllus insularis**, Scudd.

Gryllus insularis, Scudd. Proc. Bost. Soc. Nat. Hist. xviii. p. 268; Entom. Notes, v. p. 23 (♀ ♂) (1876).

Medius, niger; fronte inter ocellos subfoveolata; ore fusco; pronoto transverso; elytris abbreviatis, obscuro-testaceis; alis brevibus; pedibus 1, 2 fuscis, obscure rufo-variis; posticis rufo-castaneis vel obscuris, femoribus apice fuscis, abdomen superantibus; cercis elongatis, fuscis.

♀. Elytris dimidium abdomen vix tegentibus; ovipositore fere corporis longitudine.

♂. Elytris plus quam dimidium abdomen tegentibus.

♀. Long. corp. 20; latit. pronoti 6·5; fem. post. 13·5; ovipos. 19 millim.

♂. Long. corp. 18; latit. pronoti 6·2; fem. post. 12·5 millim.

Hab. North America, Guadalupe I., Lower California.]

4. **Gryllus luctuosus,** Serv.

Gryllus luctuosus, Serv. Orthopt. p. 335. 4; de Haan, Bijdr. p. 229. 6; Scudd. Bost. Journ. Nat. Hist. vii. p. 427. 1; S. T. Smith, Proc. Portl. Soc. Nat. Hist. 1868, p. 144; Sauss. Miss. Scient. Mex., Orthopt. p. 396. 1.

Hab. NORTH AMERICA, Canada, United States.—MEXICO, Guanajuato; GUATEMALA (*Oltramare*).

This species, characterized by its very long ovipositor, is found all over North America, and extends to Mexico and Central America.

5. **Gryllus assimilis,** Fabr. (Tab. XI. fig. 26.)

Gryllus assimilis, Fabr. Syst. Ent. p. 280. 3; Oliv.; Burm.; Sauss. Miss. Scient. Mex., Orthopt. p. 396. 2, t. 8. figg. 27–29; Mél. Orthopt. 5e fasc. p. 318. 3.

Gryllus verticalis, Serville; *Gryllus aztecus* and *G. cubensis,* Sauss. l. c.

Hab. MEXICO, States of Sinaloa and Durango, Mazatlan (*Forrer*), Vera Cruz (*H. H. Smith*), Orizaba (*Godman*); GUATEMALA, San Gerónimo (*Champion*); PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).—SOUTH AMERICA to Peru; ANTILLES, Cuba (var. *cubensis*).

Var. *pallida.* Fulvo-testaceus; capite, pronoto et abdomine nigris, linea supra-oculari et margine laterali pronoti luteis.

Hab. MEXICO, States of Durango and Sinaloa, Presidio de Mazatlan (*Forrer*).

FIGURE.—Fig. 26, the termination of the male abdomen; *v s,* supra-anal plate; *i,* infra-genital plate; *c,* cerci.

This very common species extends also over the northern half of South America, to as far south as Peru.

6. **Gryllus chichimecus,** sp. n.

Minutus, ater, nitidus; ocellis flavis; antennis fuscis, basi nigris. Elytra valde abbreviata, fusca, in dorso fulvescentia; cantho humerali fulvo; campo laterali nigro, venis rufescentibus, margine infero testaceo. Vena mediastina ramum unicum basi emittens. Alæ minimæ. Pedes postici obscure rufi. Abdomen nigrum, cercis fusco-rufescentibus.—*Var.* Elytra basi fuscescentia.

♀. Elytra segmenta 2 abdominis tegentia. Ovipositor femoris longitudine, apice rufus.

♂. Elytra segmenta 5 abdominis tegentia, tympano venis obliquis 3, speculo brevi, transverso; vena mediastina, ut solitum venam apicalem emittente.

♀. Long. corp. 14·5; elytr. 5; femor. post. 9·8; ovipos. 11 millim.

♂. Long. corp. 13; elytr. 5; femor. post. 8 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

This insect is very closely allied to *G. miopteryx,* from Peru; but it is smaller in size and the mediastinal vein of the elytra bears only one branch, instead of three branches as in the latter. Nevertheless, it may be a small variety of the same species.

G. forticeps, Sauss., from Brazil, is also an allied species of pale colour, perhaps a variety of *G. miopteryx.*

7. **Gryllus mexicanus,** Sauss.

Gryllus mexicanus, Sauss. Miss. Scient. Mex., Orthopt. p. 402. 9, t. 8. figg. 30, 30 *a*; Mél. Orthopt. 5e fasc. p. 319. 7.

Var. *a*. Elytris abbreviatis, alis minimis. Mexico city (*Forrer*).—*b*. Pallida fulvescens. Mexico, States of Durango and Sinaloa, Tres Marias Is. (*Forrer*).

Hab. MEXICO, States of Sinaloa and Durango, Tres Marias Is., Mazatlan (*Forrer*), Huasteca and Michoacan (*Saussure*), Orizaba (*Saussure, Godman*), Atoyac in Vera Cruz (*H. H. Smith*); BRITISH HONDURAS, Rio Sarstoon (*Blancaneaux*); GUATEMALA, Panima in Vera Paz (*Champion*); COSTA RICA, Caché (*Rogers*); PANAMA, Volcan de Chiriqui (*Champion*).

MIOGRYLLUS, Sauss.

Miogryllus, Saussure, Mél. Orthopt. 5e fasc. p. 362 (1877).

This genus includes various small species which differ from *Gryllus* in the neuration of their elytra: the females have parallel dorsal veins, the males two *oblique* veins only; both sexes with few simple veins on the lateral field. The anterior tibiæ have on each side a distinct drum, as in *Gryllus*.

1. **Miogryllus pusillus,** Burm.

Gryllus pusillus, Burm. Handb. d. Ent. ii. p. 733. 6 (♀).
Gryllodes pusillus, Sauss. Miss. Scient. Mex., Orthopt. p. 416. 9, t. 7. fig. 6 (♀).
Gryllus pusillus, Sauss. Mél. Orthopt. 5e fasc. p. 362. 49, fig. xi. 7.

Fusco-testaceus, supra fuscus; lineis 2 supraocularibus, ad occipitem productis, luteis; occipite insuper lineis luteis. Pronotum nigrum vel fulvo-varium. Elytra abbreviata. Alæ caudatæ. Ovipositor femoris longitudine vel longior.—Mares quam feminæ majores, capite magno.
Var. *a*. Subtus testaceus.—*b*. Cranio nigro, ore testaceo.
♀. Long. corp. 9; femor. post. 6; ovipos. 6·3 millim.
♂. Long. corp. 10·8 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*), Orizaba (*Saussure*).—GUIANA; NORTH BRAZIL; PERU.

2. **Miogryllus micromegas,** Sauss.

Gryllodes micromegas, Sauss. Miss. Scient. Mex., Orthopt. p. 418. 11 (♀).
Gryllus micromegas, Sauss. Mél. Orthopt. 5e fasc. p. 364. 52 (♀).

Fusco-testaceus. Frons inter antennas et pars supra-ocularis, nec non lineæ 4–6 cranii, luteæ. Pronotum irregulariter fulvo-quadrifasciatum. Elytra brevia; alæ nullæ. Ovipositor femori postico paulo brevior.
♀. Long. corp. 9·5; femor. post. 5; oviposit. 5·6 millim.

Hab. MEXICO (*Saussure*); NICARAGUA, Chontales (*Janson*: ♀).

3. **Miogryllus brevipennis,** Sauss.

Gryllodes brevipennis, Sauss. Miss. Scient. Mex., Orthopt. p. 418. 12 (♀).
Gryllus brevipennis, Sauss. Mél. Orthopt. 5e fasc. p. 263. 51, fig. xi. 3 ♂ *.

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* ERRATUM: in the synonymy, for *G. pusillus* read *G. brevipennis*.

M. pusillo simillimus, pronoto fulvo-vario. Elytra breviora; alæ minimæ vel nullæ. Ovipositor femori paulo brevior.

♀. Long. corp. 9·5; femor. post. 6·1; ovipos. 5·8 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).—PERU.

GRYLLODES, Sauss.

Gryllodes, Saussure, Miss. Scient. Mex., Orthopt. p. 409 (1870) (partim); Mél. Orthopt. 5e fasc. p. 365.

This genus includes numerous species, which are spread over all parts of the world. Its members present two somewhat different types, which can be distinguished as follows:—

1. Superior inner spur of the hind tibiæ shorter than the intermediate spur, and the apical valvæ of the ovipositor regularly lanceolate, as in *Gryllus*.

2. Superior inner spur of the hind tibiæ equal to or somewhat longer than the intermediate spur. The apical valvæ of the ovipositor shorter, limited at the base by a notch, principally the superior one, and terminating in a long spine; the superior valva longer than the inferior one, the two valvæ more or less separated from each other by a notch, their interior borders being sinuated. The species of type 1 are more depressed in form, and have the hind tibiæ longer. The species of type 2 are more cylindric in form; the females are more or less apterous, and the hind tibiæ are generally shorter in proportion. Type 2 somewhat approaches the group Brachytrypites, while type 1 is nearly allied to *Gryllus*.

Synopsis specierum.

a. Tibiarum posticarum calcar interno-superum intermedio brevius. Elytra ♀ squamiformia, ♂ fere dimidium abdomen tegentia. Pallide flavus, depressus, fusco-pictus. Ovipositor elongatus.—1. *poeyi*, Sss.

aa. Tibiarum posticarum calcar interno-superum intermedio æquale vel sublongius.

b. Elytra ♀ valde abbreviata, ♂ dimidium abdomen tegentia, tympano distincto instructa. Corpus vix depressiusculum. Color brunneus. Ovipositor femori valde brevior.—2. *toltecus*, Sss.

bb. Elytra ♂ valde abbreviata, tympano nullo vel obsoletissimo. Corpus cylindricum. Color rufus. Ovipositor ——? Lamina infra-genitalis maxima.—3. *forcipatus*, sp. n.

1. **Gryllodes poeyi**, Sauss.

Gryllus poeyi, Sauss. Miss. Scient. Mex., Orthopt. p. 420. 14, t. 7. fig. 8 (♂).
Gryllodes poeyi, Sauss. Mél. Orthopt. 5e fasc. p. 387. 22 (♀ ♂).

Hab. MEXICO, Mazatlan (*Forrer*).—SOUTH AMERICA; ANTILLES, Cuba.—INDIA.

A common species in Cuba, occurring also in Mexico, Tropical South America, and in India, and likely to become cosmopolitan.

2. **Gryllodes toltecus,** Sauss. (Tab. XI. figg. 27, 28.)

Gryllodes toltecus, Sauss. Mél. Orthopt. 5e fasc. p. 396. 31; Miss. Scient. Mex., Orthopt. p. 416. 8, t. 7. figg. 7, 7 E.

Gracilis, fulvus, valde pubescens; capite nigro. Pronotum supra fusco-castaneum vel rufescens, sulcatum, maculis 2 politis, piriformibus, flavidis vel rufis; lobis lateralibus subquadratis, margine infero haud obliquo. Pedes postici crassi. Tibiæ posticæ breves. Femora postica crassa, tibiis et metatarsis computatis æquilonga; metatarsi postici superne spinis 5 : 7 armati.

♀. Elytra valde abbreviata, abdominis primum segmentum tegentia; venis campi lateralis omnibus simplicibus. Ovipositor brevis; valvis apicalibus brevibus, basi per incisuram notatis, apice in spinam excurrentibus; superioribus longioribus, rectis; inferiorum spina gracillima, leviter arcuata.

♂. Elytra segmenta abdominis 3 tegentia; tympano sat distincte explicato, venis obliquis 2, speculo oblique transverso. Lamina infra-genitalis normalis.

♀. Long. corp. 15; elytr. 4; fem. post. 10; ovipos. 5 millim.

♂. Long. corp. 15; elytr. 6; fem. post. 11·8 millim.

FIGURES:—Fig. 27, the end of the ovipositor.—Fig. 28, the superior branch of the same.

Hab. MEXICO, Cordova (*Saussure*).

3. **Gryllodes forcipatus,** sp. n. (Tab. XI. figg. 29–34.)

Fulvo-rufus. Corpus gracile, cylindricum. Caput subglobosum, nigrum. Antennæ piceæ, primo articulo rufo. Os rufo-testaceum. Ocelli lutei, in lineam arcuatum exserti. Elytra rufescentia, valde abbreviata, dimidium abdomen vix tegentia. Pronotum supra cylindricum, lobis lateralibus margine infero leviter obliquo, angulo postico late rotundato. Pedes rufi; tibiæ anticæ et intermediæ graciles, longiusculæ: anticæ in latere externo foramine oblongo, in latere interno foramine nullo. Femora postica modice crassa, tibiæ et tarso computatis fere æquilonga. Tibiæ posticæ breves; calcaria interna 2 supera elongata, subæquilonga; superum tamen potius paulo longius. Metatarsi postici crassiusculi, crasse dentati (denticulis 6 : 4 vel 5 : 3). Abdomen supra fusco-nigrum, rufo-sericeum, margine segmentorum angustissime rufo- vel fulvo-velutino; venter flavo-rufus.

♂. Elytra in campo dorsali irregulariter in longitudinem venosa; speculo nullo; pone venam stridulantem tympano nullo. Campus lateralis tympano nullo; venis longitudinalibus, arcuatis. Lamina supra-analis grandis, elongato-trapezina, parte apicali villosa, margine apicali sinuato, setoso. Lamina infra-genitalis maxima, parabolica, valde elongata, scaphoidea, apice leviter incisa, quam segmenta 4–5 præcedentia computata æquilonga. Titillatores 2 nigri, lati, deplanati, bini contormes, apice uncinum rectangulum, in modo colli, capitis et rostri avis formantes (fig. 32).

Aberratio. Lamina supra-analis supra pone medium stylum cylindricum sinistrum obferens.

♂. Long. corp. 17; pronot. 3·2; latit. pronot. 4·2; elytr. 5·8; femor. post. 13 millim.

Femina ignota.

FIGURES.—Fig. 29, the male insect.—Fig. 30. The termination of its abdomen, from beneath; *i*, infra-genital plate.—Fig. 31, The anal pieces from above; *vs*, supra-anal plate; *t*, the titillators; *i*, the infra-genital plate; *c*, the cerci.—Fig. 32, the titillators, as seen *in situ* from above.—Fig. 33. End of the right titillator, extracted, seen from beneath.—Fig. 34. Ditto, more from the side.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

The systematic position of this insect is uncertain, the female being unknown. It differs from the other *Gryllodes* in the elytra not having a true drum, the membrane not being opaque and parchment-like, and the veins very irregular. Moreover, the infra-genital plate of the male is remarkably large. If the ovipositor of the female is rudimentary, the species should be transferred to the genus *Anurogryllus.*

Tribus MYRMECOPHILINÆ.

Myrmecophiliens, Saussure, Miss. Scient. Mex., Orthopt. p. 422; Mél. Orthopt. 5e fasc. p. 455.
Myrmecophilidæ, Mogisoplistidæ, Brunner v. Wattenwyl, Prodr. d. Eur. Orthopt. pp. 445, 447.

[MYRMECOPHILUS, Latr.

Myrmecophila, Latreille, Fam. Nat. Règne Anim. p. 413 (1825), et auctores.

1. **Myrmecophilus americanus,** Sauss.

Myrmecophilus americanus, Sauss. Mél. Orthopt. 5e fasc. p. 461. 4 (♀).

Hab. Colombia.—Likely to be found in Panama.]

ECTATODERUS, Guér.

Ectatoderus, Guérin-Méneville, ap. Lefèvre, Voyage en Abyssinie, 1840, vi. p. 337; Saussure, Mél. Orthopt. 5e fasc. p. 470.
Ornebius, Guérin-Méneville, Icon. du Règne Anim., Ins. p. 331 (1840).

1. **Ectatoderus aztecus,** sp. n. (Tab. XI. figg. 35, 36.)

♂. Crassiusculus, fuscus. Caput suborbiculare, levissime convexum, vitta transversa obsoleta faciei vittaque irregulari utrinque supra oculos, fulvis. Antennæ fuscæ, basi pallidiores. Oculi late elliptici, vel subovoidei, superne haud attenuati, margine interno supra subtilissime inciso. Palporum articulus ultimus latiusculus, ovatus. Pronotum æque longum ac latum, deplanatum, antice haud fortiter coarctatum; margine anteriore sinuato, posteriore transverso, vix arcuato; superficie supra castanea, utrinque ad margines late flavo-fulva, lobis lateralibus nigris. Discus in dorso utrinque punctis crassis nigris 2 notatus, ac inter illos utrinque pagum intercalatum piriformem, elevato-marginatum, extus acutum obferens. Elytra in dorso parallela, apicem abdominis liberantia, sordide testacea et lineis fuscis umbrata, margine postico arcuato; ante marginem vitta regulari fusca. Speculum valde latius quam longum, elevato-strigatum, angulo antico recto vel obtuso; ramis analibus 3. Campus lateralis latissimus, luteus, vittis 2–3 longitudinalibus fuscis, secunda latissima; margine infero ante medium angulato. Pedes compressi; anteriores et intermedii fusci, coxis, genubus articulationeque tarsorum testaceis; metatarsis longiusculis. Femora postica crassa, fusco-testacea, apice fusca. Tibiæ post. latiusculæ, fusco-rufescentes, apice fusciores, supra late canaliculatæ, marginibus valde denticulatis. Calcar interno-intermedium sat elongatum; superum minutum. Tarsi fusci; metatarsus posterior elongatus, supra multidenticulatus. Abdomen fusco-nigrum, subtus fusco-testaceum. Cerci longiusculi, rufi, basi incrassati. Ultimum segmentum dorsale angustum, testaceum. Lamina supra-analis elongato-trigonalis, apice rotundata. Lamina infra-genitalis transversa, margine subarcuato, nigro.

♂. Long. corp. 6·8; pronot. 2·2, latit. 3; elytr. ultra pronot. 2·7, latit. 3·2; fem. post. 4·8 millim.

Figures.—Fig. 35. The male insect.—Fig. 36. The pronotum, to show the four black spots and the two scutella intercalated between them.

Hab. Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

This species is very easy to distinguish from all the other known *Ectatoderi* by the pronotum not being strongly produced posteriorly, and but slightly attenuated anteriorly, the markings of its upper surface also differing from those of the allied forms. The shortness of the pronotum leaves the speculum of the elytra quite free, and even the diagonal vein, which starts from its anterior angle, is partly visible.

[CYCLOPTILUS, Scudd.

Cycloptilum, Scudder, Proc. Bost. Soc. Nat. Hist. xii. p. 142 (1868); Walker, Cat. Dermapt. Saltat. i. p. 118; Saussure, Miss. Scient. Mex., Orthopt. p. 425.
Cycloptilus, Saussure, Mél. Orthopt. 5e fasc. p. 476.

1. **Cycloptilus squamosus,** Scudd.

Cycloptilum squamosum, Scudd. Proc. Bost. Soc. Nat. Hist. xii. p. 142 (♀ ♂); Entom. Notes, ii. pp. 5, 9; Sauss. Miss. Scient. Mex., Orthopt. p. 427. 2 (♂).
Cycloptilus squamosus, Sauss. Mél. Orthopt. 5e fasc. p. 477. 2.

Hab. North America, Dallas in Texas (*Boll*).—Certainly extends to Northern Mexico.

C. americanus, Sauss., from Cuba, differs from this species in its very rudimentary elytra, covered by the hind part of the pronotum.]

LIPHOPLUS, Sauss.

Liphoplus, Saussure, Mél. Orthopt. 5e fasc. p. 483 (1877) *.

This genus is now recorded as American; it was only known previously from Oceania and Burmah. The anterior tibiæ have a very small drum on their inner face, somewhat turned back on the upperside. In the females the drum is only apparent as a small point; in the males it is somewhat larger, orbicular, and very distinct, but sometimes obliterated on one of the tibiæ.

1. **Liphoplus mexicanus,** sp. n. (Tab. XI. fig. 37.)

♂. Rufo-testaceus, depressus. Antennæ concolores. Caput et pronotum canescente squamosa. Scutellum faciale valde tumidum, sulco divisum. Pronotum grande, depressum, antice valde angustatum, postice valde dilatatum, margine postico transverse arcuato. Elytra illum longe superantia, segmenta ultima abdominis 2 liberantia, quam pronotum latiora, testacea, plana; campo laterali deflexo, angusto, ad inferum reflexo, per venam longitudinalem crassam luteam diviso, dimidia parte marginali (basi et apice excepta) nigrescente. Campus dorsalis latissimus, apice late rotundatus, marginibus rufescentibus; speculo maximo, subtrigonali, margine postico arcuato, angulo antico sub margine pronoti recondito, disco toto irregulariter flabellatim pliculato, ac per venam rectangulam diviso. Pedes rufi, albido-squamosi; femora crassa. Tibiæ posticæ leviter arcuatæ, superne planæ, canthis acutis, denticulis minutis numerosissimis confertim armatæ. Calcaria interna: *intermedium* tertiam partem metatarsi æquans; *superum* breve, quam *inferum* brevius; hoc longitudine dimidium *intermedium* æquans, vel plus. Calcaria externa minima: *superum* paulo longius quam *inferum*, ab *intermedio* remotum. Metatarsi postici compressi, superne biseriatim denticulati. Tarsi omnes apice nigri. Abdomen in parte apicali attenuatum, nigrum. Lamina supra-analis minuta, transversa, deflexa, sulco divisa. Lamina infra-genitalis elongata, pilosa, apice denticulos 2 formans. Cerci longi, rufi.

♂. Long. corp. 9; pronot. 3·7, latit. 3; elytr. ultra pronot. 2·9, latit. 3·8; femor. post. 5 millim.

Hab. Mexico, Amula in Guerrero 6000 feet (*H. H. Smith*).

* Erratum.—In my Synopsis of the Myrmecophiliens, p. 456, the genus *Liphoplus* is placed under the number 5, 5: the number 5 has been omitted for the genus *Arachnocephalus* ("tibiæ posticæ graciles" etc.) after 4, 4.

[2. **Liphoplus krugii,** sp. n.

♀. Apterus, gracillimus; capite, antennis, thorace, pedibus cercisque rufis; abdomine nigro; corpore toto albido-squamoso. Caput superne depressiusculum. Palporum articulus ultimus trigonalis. Pronotum æque longum ac latum, vel paulo longius, posterius minime dilatatum, margine posteriore transverso. Meso- et metanotum rufa. Pedes pubescentes. Tibiæ anticæ in latere interno foramine minimo instructæ, nonnunquam obliterato. Femora postica breves, modice crassa. Tibiæ et eorum calcaria illis *L. mexicani* conformia. Metatarsus compressus, supra denticulis 6 : 8. Abdomen gracile; lamina supra-analis transversa. Cerci ingentes, longissimi ac crassi, verisimiliter quam corpus longiores, rufi. Lamina infragenitalis regulariter trigonalis. Ovipositor gracilis, leviter deflexus, valvis apicalibus breviter lanceolatis. Long. corp. 9; pronot. 2, latit. 1·8; fem. post. 5; tib. post. 3·5; ovipos. 4·3 millim.

Hab. ANTILLES, Cuba (*Dr. Krug, Muss. Berol. et Genavense*?).

This insect may be the female of *L. mexicanus*.

It has the same facies and coloration as *Arachnocephalus yersini*, Sss.; but the frontal swelling is less pronounced than in that species; the last joint of the palpi is shorter and less dilated; the posterior tibiæ are shorter, stouter, less straight, prismatic, not cylindric; the posterior metatarsus is longer, more compressed, more serrulate; the second joint of the tarsi is nôt cordiform; the ovipositor is longer and more robust; and the cerci are enormously large.]

Tribus TRIGONIDINÆ.

Trigonidiens, Saussure, Miss. Scient. Mex., Orthopt. p. 361; Mél. Orthopt. 6ᵉ fasc. p. 598.

The insects belonging to this group are of small size, and are very graceful and exquisite musicians. The elytra have in both sexes the veins of the lateral field longitudinal and simple. The mediastinal vein is not ramose, but in the males widely separated from the humeral vein.

In all the American genera the elytra of the males are peculiarly formed and musical, the tambourine being very complete, extending over the entire elytra, even when the latter remain more or less coriaceous, and presenting the following characters (Tab. XIII. fig. 36):—

Only one oblique vein, quite longitudinal, curved, extending up to the stigma and receiving in its middle an adventitious, longitudinal, sigmoidal vein, which starts from the basal angle of the elytron. The axillary veins not anastomosing together before the *nodus analis*. The venæ *post-analis* and *post-axillares* straight or feebly curved. The speculum elongated, rhomboidal, and presenting a concentric rhomboidal field of the same form as the speculum, delineated by an adventitious nerve parallel to the margins of the speculum. The *vena involvens* forming two narrow cells along the hind margin of the speculum and contiguous in the middle. The apical field atrophied, without nervures, and very narrow, membranaceous, and rounded.

ANAXIPHUS, Sauss.

Anaxipha, Saussure, Miss. Scient. Mex., Orthopt. p. 370 (1870).
Anaxiphus, Saussure, Mél. Orthopt. 6e fasc. p. 615.

Very small insects, of testaceous colour. The elytra of the males quite membranaceous and transparent, with the post-anal and post-axillary veins nearly straight.

1. **Anaxiphus pulicarius**, Burm.

Gryllus pulicarius, Burm. Handb. d. Ent. ii. p. 732. 2 (1838).
Anaxipha pulicaria, Sauss. Miss. Scient. Mex., Orthopt. p. 371. 1 (♀ ♂), t. 7. fig. 1 (♂).
Anaxiphus pulicarius, Sauss. Mél. Orthopt. 6e fasc. p. 615. 1.

Testaceus; elytris ♀ abdomine paulo brevioribus, ♂ longioribus; tibiis anticis foramine in latere interno. —Long. 6–7 millim.

Hab. North America, Dallas in Texas (*Boll*).—Mexico, Eastern Cordillera, Orizaba.

CYRTOXIPHUS, Brunn.

Cyrtoxipha, Brunner v. Wattenwyl, Mittheil. schweiz. ent. Ges. iv. p. 168 (1873); Saussure, Miss. Scient. Mex., Orthopt. p. 373.
Cyrtoxiphus, Saussure, Mél. Orthopt. 6e fasc. p. 616.

Small insects, of testaceous colour. The elytra of the males large, quite membranaceous, with the field between the diagonal and the post-anal veins usually containing a more or less evident triangular area, this being very distinct in the species with wide elytra and obsolete in those with narrow elytra.

The species of *Cyrtoxiphus* are difficult to distinguish from each other. The principal characters are to be found in:—

1. The *ovipositor* (Tab. XI. figg. 39, 45) (compressed and somewhat curved). It may be longer and more slender (fig. 43), or shorter and wider (fig. 39); in the latter case the second half is suddenly somewhat dilated (figg. 39, 44, *a*). In addition, the end of the superior margin, which is very slightly horizontally truncate (so as to form the acute apex of the organ), varies in shape according to the species. When the truncation is short, the obtuse angle formed by it on the superior outline (fig. 45, *a*) is near the end of the ovipositor; when it is longer, it is placed at two-thirds of its length, or even in the middle (fig. 39), and coincides with the angle formed by the dilatation of the apical half. The pointed, cuneiform end of the organ is finely, in some cases more coarsely, denticulated.

2. The *elytra* of the males are in some species slender, with the speculum of the tambourine rhomboidal, longer than broad; in others the elytra are very wide, and the speculum is squarely rhomboidal, as broad as long, and the pronotum is much dilated behind, so as to correspond with the breadth of the elytra.

In both sexes the lateral field of the elytra has three longitudinal veins and a fourth very short one. This rudimentary vein may be placed between the two inferior

veins or under the third. It often anastomoses with the third long vein, but this may be accidental.

Synopsis specierum.

I.

1. Elytra complete explicata.
   a. Metatarsus posterior longissimus, quam articuli 2 reliqui tarsi plusquam duplo longior. Corpus gracillimum. Pronotum ♀ cylindricum.—1. *macilentus,* sp. n.
   aa. Metatarsus posterior elongatus, quam articuli 2 reliqui tarsi haud duplo longior. Pronotum antice coarctatum.
      b. Feminæ.
         c. Pronotum transverse fornicatum, margine postico leviter arcuato, utrinque subsinuato.
            d. Tibiæ anticæ basin versus sensim dilatatæ :
               e. leviter fusiformes.—2. *aztecus,* Sss.—3. *smithi,* sp. n.
               ee. basi supra fortiter dilatatæ, apice graciles ;
                  f. tertia parte apicali gracili.—4. *tibialis,* sp. n.
                  ff. dimidia parte apicali gracili, parallela.—5. *championi,* sp. n.
            dd. Tibiæ anticæ tota longitudine graciles.—6. *olmecus,* sp. n.—7. *pictus,* sp. n.
         cc. Pronotum leviter deplanatum, canthis lateralibus minus rotundatis, margine postico transverso vel subangulato. Tibiæ anticæ leviter fusiformes.—8. *toltecus,* Sss.
      bb. Mares cogniti.
         c. Species graciles. Elytra in dorso quam lata duplo longiora, speculo irregulariter rhomboidali, longiore quam latiore, campo laterali perpendiculari. Tibiæ anticæ illis feminarum conformes.—*aztecus, tibialis, smithi, championi, pictus.*
         cc. Species crassiusculæ ; pronoto postice latissimo. Elytris in dorso quam lata haud duplo longiora, speculo æque lato ac longo, area ulnari areolam trigonalem concentricam obferente. Tibiæ anticæ basi supra leviter dilatatæ.—8. *toltecus,* Sss.—9. *angusticollis,* Sss.

1, 1. Elytra plus minus abbreviata.—10. *chichimecus,* Sss.

II.

Feminarum ovipositor (Tab. XI. figg. 38–45) :

a. crassiusculus, quam dimidium femur posticum brevior, parum arcuatus ; valvis apicalibus in ejus dimidia longitudine extensis, margine supero in medio angulato ; apice haud crenulato (fig. 39).—2. *aztecus.*—4. *tibialis.*

aa. Ovipositor gracilis, arcuatus, dimidium femur æquans ; ejus valvæ apicales breves, tantum apicem ovipositoris occupantes (fig. 45).

b. Ovipositoris dimidia pars apicalis quam pars basalis paulo latior, margine supero ante apicem crenulato, apice acute producto (fig. 44).—8. *toltecus.*

bb. Ovipositoris tota longitudine subæquilatus (fig. 43) :

c. apice subtus crenulatus.—1. *macilentus.*

cc. apice subtus crasse obtuse, supra subtiliter ante apicem, crenulatus.—6. *olmecus.*

1. **Cyrtoxiphus macilentus,** sp. n. (Tab. XI. fig. 45.)

♀. Minutus, gracillimus, omnino pallide fulvo-testaceus. Caput quam pronotum valde latius, vertice oblique deplanato, rostro inter antennas acutiusculo. Palpi maxillares elongati, articulis 3°–5° longiusculis, ultimo apicem versus minime dilatato, truncato. Pronotum angustum, æque longum ac latum, antice minime vel haud coarctatum, supra cylindricum, margine postico leviter arcuato. Elytra angustissima, venis dorsalibus parallelis 4, invicem parum remotis; venulis transversis nullis; campo laterali venis 3, infera submarginalis. Pedes gracillimi. Foramen tibiarum anteriorum oblongo-ellipticum. Femora posteriora gracillima; spinæ tibiarum posticarum apice brunneæ. Metatarsus posterior longissimus, quam articuli 2 ultimi tarsi computati fere triplo longior; quam calcar internum tibiarum plus quam triplo longior. Ovipositor gracillimus, arcuatus, parte apicali rufa; valvis apicalibus brevissimis quintam vel sextam partem ovipositoris efficiens (scilicet angulo (*a*) marginis superioris ovipositoris prope apicem sito).

♀. Long. corp. 5, cum elytris 6·5, cum alis 9·6; fem. post. 5; ovipos. 1·7 millim.

Figure.—Fig. 45, the ovipositor, without dilatation in the middle. The angle of the superior margin (*a*) only formed by horizontal truncation of the extremity.

Hab. Panama, Bugaba (*Champion*).

♀. Var. ? *gracilis.* Minor, gracilis. Elytra inter venas venulis transversis instructa; campo laterali venis 4; infera submarginali, præcedente incompleta. Metatarsus posterior quam articuli 2 sequentes vix plusquam duplo longior.—Long. cum elytris 6·5, cum alis 9 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

2. **Cyrtoxiphus aztecus,** Sauss. (Tab. XI. figg. 38, 39.)

Cyrtoxipha azteca, Sauss. Miss. Scient. Mex., Orthopt. p. 375. 2.

Cyrtoxiphus aztecus, Sauss. Mél. Orthopt. 6ᵉ fasc. p. 626. 11 (♀).

Fulvo-testacea, brunnescens vel fusco-ænea. Pronotum latius quam longus, anterius coarctatum; canthis rotundatis; lobis lateralibus macula brunnea notatis. Pedes fulvo-testacei. Tibiæ anticæ (fig. 38) leviter fusiformes, parum dilatati, tympano utrinque oblongo. Femora postica crassiuscula; metatarsus posticus quam articuli 2 ultimi tarsorum paulo longior; quam calcar internum tibiarum duplo longior.

♀. Elytra abdomine longiora; in campo dorsali venis longitudinalis 5 invicem sat remotis (interna breviore); venis spuriis inter illas nullis; in campo laterali (infra canthum humeralem) venis 3; tertia, infera, completa, longiuscula, apice cum 2ª ante illius apicem reconciliata; prima ♀ venæ humerali (cantho) parallela. Campus dorsalis, ac lateralis partim, venulis transversis distinctissimis reticulatus. Alæ fuscescentes, longe caudatæ. Ovipositor (fig. 39) parum elongatus, parum arcuatus, valvis apicalibus dimidiam longitudinem ejus efficientibus *.

♂. Feminæ formis simillimus. Pronotum latius trapezinum. Elytra in dorso quam in femina paulo latiora, tamen gracilia. Eorum campus dorsalis ter longior quam latus, speculo elongato; campus lateralis in area supera venulis transversis numerosis quadrato-reticulatus, areis reliquis venulis nullis, vena prima (mediastina) apice a cantho divergens.

♀. Long. cum elytris 6, cum alis 9·3 millim.

♂. Long. cum elytris 7, cum alis 10·5 millim.

Figures.—Fig. 38, anterior tibia, outer side.—Fig. 39, ovipositor; its dilatation, *a*, in the middle.

Hab. Mexico, Orizaba (*Saussure*); Guatemala (*Mus. Genavense*).

Var. *cayennensis.* Caput, pronotum, elytra, fusco-ænea; palpis pedibusque testaceis, his fusco-umbratis; antennis testaceis, apicem versus grisescentibus, articulo 1° fusco; pronoti lobis lateralibus margine infero luteo.

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* The limit of the apical valvæ is in the point *a*.

Hab. GUIANA, Cayenne (*Prudhomme*).

Resembles *C. tibialis* in its livery, but much browner above. The anterior tibiæ are formed as in *C. aztecus*.

C. imitator, Sauss., from Cuba, may be a variety of this species.

3. **Cyrtoxiphus smithi,** sp. n.

♂. *C. championi* affinissimus at minor, fulvo-testaceus. Occipite vittaque media pronoti brunneis. Palpi ultimo articulo apice fusco. Elytra supra angusta; campo marginali venis 4; tertia incompleta. Alæ longe caudatæ; cauda infuscata. Tibiæ anticæ leviter fusiformes, foramine utrinque mediocri, oblongo. Femora postica crassiora, genubus rufis. Tibiarum spinæ apice fuscæ. Metatarsus posticus articulis 2 sequentibus æquilongus vel paulo longior, quam calcar internum haud duplo longior. Secundus articulus tarsorum omnium fuscus. Tibiæ posticæ ad exsertionem spinarum puncto fusco.

♂. Long. corp. 5·5, cum elytr. 6, cum alis 11; fem. post. 5; latit. campi dors. elytr. 2 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

Differs from the male of *C. macilentus* (var. *gracilis*) in its short posterior metatarsus.

4. **Cyrtoxiphus tibialis,** sp. n. (Tab. XI. fig. 40.)

♂ ♀. *C. mexicano* simillimus, fulvo-testaceus vel leviter fuscescens. Pronotum pilis fuscis sparse hirsutum. Caput superne fusco-punctatum, vel lineolis fuscis 4 et infra oculos vittis 2 fuscis. Pronotum supra fusco-punctatum, vel vittis 2 longitudinalibus fusco-punctatis, vel infuscatum; canthis vitta lutea; lobis lateralibus vitta longitudinali fusca; margine infero luteo. Tibiæ anticæ in dimidia parte basali dilatatæ, dimidia parte apicali gracili; tympanis majusculis.

♀. Long. corp. 5, cum elytr. 6, cum alis 9·1; fem. post. 4·2; latit. campi dorsalis elytri 1·8 millim.

♂. Long. corp. 5·2, cum elytr. 6, cum alis 9·2; fem. post. 4·2; latit. campi dorsalis elytri 2 millim.

FIGURE.—Fig. 40, the anterior tibia, inner side.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

5. **Cyrtoxiphus championi,** sp. n. (Tab. XI. fig. 41.)

♂. Gracilis, fulvo-testaceus, vertice subdeplanato. Palpi decolores, ultimo articulo parum dilatato. Pronotum trapezinum, valde latius quam longum, fulvo-pilosum, marginibus lateralibus pallescentibus. Elytra in dorso angusta; campi lateralis venæ 3 completæ. Alæ longe caudatæ, apice brunnescentes. Tibiæ anticæ tympano intus magno, oblongo, extus minore; basi superne ad tympanum dilatatæ, convexæ. Femora postica crassiuscula; metatarsus posterior quam articuli 2 reliqui tarsi sesquilongior; quam calcar internum tibiarum paulo plus quam duplo longior.

♂. Long. corp. 6·2, cum elytr. 6·8, cum alis 11·2; femor. post. 6; latit. campi dors. elytr. 2 millim.

FIGURE.—Fig. 41, anterior tibia, inner side.

Hab. PANAMA, Bugaba (*Champion*).

This insect, like *C. smithi*, cannot be the male of *C. macilentus*, the posterior metatarsi being shorter and stouter. It is characterized by the compressed swelling on the base of the anterior tibia.

6. **Cyrtoxiphus olmecus,** sp. n. (Tab. XI. figg. 42, 43.)

♀. *C. azteco* simillimus, at paulo major, flavo-testaceus; capite et pronoto superne rufescentibus vel brunnescentibus. Elytra breviuscula, abdominis longitudine; campi dorsalis venis crassiusculis, prominentibus;

campi lateralis venæ 4, tertia intercalata, abbreviata. Alæ caudatæ. Femora 1, 2 ante apicem annulo brunneo. Tibiæ anticæ (fig. 42) graciles, ad tympanum haud sensim dilatatæ; tympano oblongo, minore. Femora postica crassa, genubus utrinque fusco-maculatis. Tibiæ posticæ ad spinas fusco-punctatæ. Ovipositor (fig. 43) gracilis, elongatus, arcuatus, ejus valvæ apicales quartam partem longitudinis occupantes.

Long. corp. 6, cum elytr. 7, cum alis 8·2; fem. post. 5·8; ovipos. 2·6 millim.

Figures.—Fig. 42, anterior tibia, inner side.—Fig. 43, ovipositor.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

7. **Cyrtoxiphus pictus,** sp. n.

♂. Minutus, pallide testaceus. Caput minutum, nihilominus tamen quam collum latius, flavo-testaceum; oculis valde prominulis; vertice et fronte fasciis 2 nigris longitudinalibus, antice in rostro confusis; clypeo nigro-picturato; ore obscuro; palpis gracilibus articulis 3°, 4° flavidis, reliquis nigris. Antennæ flavidæ, apice obscurescente, articulis 1°–3° nigris. Pronotum rufum, antice attenuatum; ejus lobi laterales retrorsum obliqui, margine antico arcuato, obliquo (Mél. Orthopt. 6ᵉ fasc. figg. xi., viii., 2 *a*). Elytra pallide testacea, mediocriter lata, parallela, abdominis longitudine, margine apicali fusco-maculosa; campo laterali venis 4; prima a v. humerali paulum divergente (3ª brevi, arcuata). Alæ longissime caudatæ. Pedes antici et intermedii nigri; tibiis anticis gracilibus, vix dilatatis. Pedes postici elongatiusculi; femoribus extus in longitudinem nigro-bifasciatis (fasciis apice confusis), margine infero tenuiter nigro-limbato (basi excepta), genubus nigris; tibiis brunneis, spinis pallidioribus; tarsis brunneis, metatarso (apice excepto) testaceo. Abdomen nigrum.

♂. Long. corp. 6, cum alis 10; pronot. 1; femor. post. 4·7 millim.

Hab. Panama (*coll. Brunner v. Wattenwyl*: no. 11,765 *).

Resembles *C. angusticollis*, Sauss., in form, but more slender and much smaller. In my synopsis of the genus (Mél. Orthopt. 6ᵉ fasc. p. 612) it would find its place in the section: *a*, *b*, *cc*, *d*, but with the mediastinal vein but little divergent from the *v. humeralis*.

8. **Cyrtoxiphus toltecus,** Sauss. (Tab. XI. fig. 44.)

Cyrtoxipha tolteca, Sauss. Miss. Scient. Mex., Orthopt. p. 376. 3 (♀).
Cyrtoxiphus toltecus, Sauss. Mél. Orthopt. 6ᵉ fasc. p. 627. 13 (♂).

Sordide testaceus, vel leviter fuscescens, vel fusco-testaceus. Antennæ irregulariter fusco-annulatæ vel unicolores. Oculi prominuli. Pronotum fusco-setosum.

♀. Pronotum trapezinum, antice parum coarctatum; margine posteriore obtusangulo; canthis lateralibus parum rotundatis, subacutis, luteis. Elytra elongata, campo dorsali inter venas venis spuriis instructo ac transverse reticulato, cantho palidiore, vena humerali canthum efficiente, fusca, subsigmoidali. Campus lateralis venis 4, tertia completa, quarta brevi cum tertia confluente (variabilis); areæ supera et secunda plus minus quadrato-reticulatæ. Alæ longe caudatæ. Pedes brunneo-annulati. Tibiæ anticæ basin versus vix dilatatæ. Femora postica ante apicem annulo fusco. Metatarsus posticus articulis 2 sequentibus tarsi sesquilongior. Ovipositor gracilis, longiusculus, dimidia parte apicali incrassata; valvis apicalibus quintam partem ejus longitudinis haud superantibus, serrulatis †.

♂. Fusco-testaceus. Pronotum transversum, latissimum, anterius valde coarctatum, margine postico recto. Elytra in dorso latissima, corpus utrinque valde superantia; speculo æque lato ac longo. Campus

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* Extracted from my notes.

† In this species the apical valvæ do not extend to the angle (*a*) of the superior margin. This angle is caused by the dilatation of the apical half of the ovipositor.

lateralis ad inferum reflexus, involvens; venis 4: 1ª divergente, apice arcuata, fusca, 2ª sigmoidali, 3ª incompleta, cum 4ª confluente; area supera apice valde dilatata, valde transverse venosa. In campo dorsali, area inter v. postanalem et diagonalem exserta areolam trigonalem obferens. Pedes testacei. plus minus fusco-umbrati. Femora ante apicem annulo fusco.

Var. Caput et pronotum brunnea; elytra in dorso lineis variis fuscis, in venis conspersis ornata. [Panama, Chiriqui.]

♀. Long. corp. 6, cum elytr. 8·8, cum alis 12·2; ovipos. 2·8 millim.

♂. Long. corp. 6, cum. elytr. 9, cum alis 12; latit. campi dors. elytr. 3·4 millim.

Figure.—Fig. 44. Ovipositor; *a*, its dilatation in the middle.

Hab. Mexico, Orizaba (*Saussure*), Teapa in Tabasco (*H. H. Smith*); Guatemala (*Mus. Genavense*); Costa Rica, Caché (*Rogers*); Panama, Volcan de Chiriqui (*Champion*: var.).

9. **Cyrtoxiphus angusticollis,** Sauss.

Cyrtoxipha angusticollis, Sauss. Mém. Mex. Orthopt. p. 377. 5, t. 7. fig. 2 (♂).

Cyrtoxiphus angusticollis, Sauss. Mél. Orthopt. 6ᵉ fasc. p. 628. 15, fig. lxxx. 6* (♂).

♂. *C. tolteco* simillimus at paulo major. Flavo-testaceus; antennis longe fusco-annulatis, ac vena humerali fusca. Pronotum transversum, postice latissimum. Alæ haud vel vix infuscatæ. Tibiæ anticæ gracillimæ, basin versus vix dilatatæ.

Var. *a.* Elytra campo dorsali venis baseos fuscis.—*b.* Tota testacea; antennis haud annulatis; vena humerali haud fusca.—*c.* Elytra campo dorsali vittis nonnulis fuscis in venis notato, stigmate fusco.

♂. Long. cum alis 10·2, cum elytr. 14·2; fem. post. 8; latit. camp. dors. elytr. 4 millim.

Hab. Mexico, Cordova (*Saussure*); Panama, Bugaba (*Champion*).

10. **Cyrtoxiphus chichimecus,** Sauss.

Cyrtoxiphus chichimecus, Sauss. Mél. Orthopt. 5ᵉ fasc. p. 630. 19 (♂).

♂. Niger, gracilis; elytris abdomine brevioribus, tympano reticuloso, incondite explicato.—Long. 7 millim.

Hab. Mexico (*Mus. Brit.*).

PHYLLOSCIRTUS, Guér.

Phylloscirtus, Guérin-Méneville, Icon. du Règne Anim., Ins. p. 333 (1829–1838); Saussure, Miss. Scient. Mex., Orthopt. p. 363; Mél. Orthopt. 6ᵉ fasc. p. 633.

Cranistus, Stål, Eugen. Freg. Resa, Orthopt. p. 314 (1860).

Phyllopalpus, Uhler, Proc. Ent. Soc. Phil. ii. p. 543 (1864).

Insects of larger size than those of the preceding genera, remarkable by their fine metallic colours, and by their mimetic forms, imitating Coleoptera, especially the Cicindelidæ and Chrysomelidæ. In this genus the right elytron, which in rest covers the back, is coriaceous and coloured so as to imitate the facies of Coleoptera. The left elytron remains in great part membranaceous and hyaline; the musical instrument has been here partly lost, to enable the insect to become mimetic. Nevertheless, the

* This figure is not quite correct: the inferior little vein of the lateral field of the elytron (the fourth) has been omitted; it is confluent with the base of the third vein and forms thus a small cell.

right elytron, although more or less coriaceous, possesses all the veins of the normal drum, and seems to be still somewhat susceptible of giving sonorous vibrations.

Synopsis specierum.

a. Antennæ basi incrassatæ, crasse pilosæ, dehinc annulo luteo ornato.

b. Corpus gracile, cicindeloides, pronoto elongato, gracili. Insectum cæruleum.—1. ***cæruleus,*** Sss.

bb. Corpus crassiusculum, pronoto æque lato ac longo.

c. Flavescens, nigro notatus.—2. *elegans,* Guér.

cc. Flavus, elytris splendide viridi-metallicis.—3. *brunnerianus,* Sss.

aa. Antennæ basi haud incrassatæ ; corpus crassiusculum.—Species proper to South America.

1. **Phylloscirtus cæruleus,** Sauss.

Phylloscirtus cæruleus, Sauss. Miss. Scient. Mex., Orthopt. p. 366. 2 (♀ ♂), t. 7. figg. 3, 3 *a* (♂) ; Mél. Orthopt. 6ᵉ fasc. p. 638. 4 (♀ ♂), fig. lxxx. 4.

Hab. Mexico, Eastern Cordillera (*Saussure*).

2. **Phylloscirtus elegans,** Guér.

Phylloscirtus elegans, Guér.-Ménev., Icon. du Règne Anim., Ins. p. 333 (♂) ; Gerst. Stett. ent. Zeit. xxiv. p. 427 (1863) ; Sauss. Miss. Scient. Mex., Orthopt. p. 368. 3 (♂) ; Mél. Orthopt. 6ᵉ fasc. p. 637. 2 (♀ ♂).

Hab. Mexico.—Colombia.

3. **Phylloscirtus brunnerianus,** Sauss.

Phylloscirtus brunnerianus, Sauss. Miss. Scient. Mex., Orthopt. p. 368. 5 (♀ ♂), t. 7. fig. 4 (♀) ; Mél. Orthopt. 6ᵉ fasc. p. 636. 1 (♀ ♂), fig. lxxx. 2, 3.

Hab. Mexico (*Mus. Paris*).

THAMNOSCIRTUS, Sauss.

Thamnoscirtus, Saussure, Mél. Orthopt. 6ᵉ fasc. p. 630 (1878).

Insects much like *Phylloscirtus*, with more or less coriaceous and coloured elytra, mimicking the forms of various Cicindelidæ.

1. **Thamnoscirtus cicindeloides,** Gerst.

Phylloscirtus cicindeloides, Gerst. Stett. ent. Zeit. xxiv. p. 428. 4 (♀ ♂) (1863) ; Sauss. Miss. Scient. Mex., Orthopt. p. 369. 7.

Thamnoscirtus cicindeloides, Sauss. Mél. Orthopt. 6ᵉ fasc. p. 631. 1 (♀ ♂), t. 16. fig. xlvi. 1 (♀).

Hab. Panama, Bugaba (*Champion*).—Venezuela, Caracas.

2. **Thamnoscirtus montanus,** sp. n. (Tab. XIII. fig. 36.)

♂. Flavo-testaceus, cicindeliformis. Antennæ parte basali plumosæ, nigræ, articulis 1°–2° fulvis, dehinc longiuscule albæ, dehinc fuscæ. Palpi labiales ac palporum maxillarium articuli 2 ultimi nigri; primo et secundo articulo supra nigro-marginatis; ultimo articulo palporum maxillarium ovato-foliaceo, truncato. Caput immaculatum. Pronotum margine postico medio nigro, vel nigro-bimaculato. Elytra basi et parte costali irregulariter fulvo-ochracea, de reliquo luteo-fulva, vittis nigris irregularibus transversis 2, cum vitta obliqua conjunctis; macula transversa flavida margineque apicali anguste luteo; campo laterali luteo, macula apicali nigra 1 vel 2, ac frequenter in area supera vitta longitudinali fuscescente. Alæ elytrorum longitudine, fuscescentes. Pedes fulvo-testacei. Tibiæ intermediæ utrinque fusco-lineatæ; femora 1–2 apice linea brevi nigra. Genua postica apice fusco-rufa. Tibiæ posticæ supra linea fusca. Tarsi postici articulis 2 sequentibus æquilongis.

♂. Long. corp. 5·5, cum elytr. 7; elytr. 5; femor. post. 4·8; latit. elytr. in dorso 2·8 millim.

Hab. PANAMA, Bugaba (*Champion*).

Resembles *T. cicindeloides*, Gerst., but this latter species is of larger size, has no wings, and its antennæ are not plumose at the base.

[3. **Thamnoscirtus viridicatus,** sp. n.

Niger, *T. cicindeloida* formis simillimus. Antennæ basi pilosæ, nigræ, tum albidæ, dein piceæ. Caput fulvum, postice nigrum; fronte, vertice occipiteque nigris; fascia angusta interoculari fulva; palpis nigris. Pronotum margine antico margineque loborum lateralium toto, necnon superne fasciis 3 longitudinalibus incompletis flavidis. Elytra abdominis longitudine; alæ abortivæ. Sternum pedesque 1us–2us rufa; femoribus basi fuscis; tibiis superne nigris; anticis utrinque foramine elliptico pellucido instructis. Pedes postici rufo-brunnei; femoribus basi decoloribus (viridibus?). Abdomen nigrum; cercis testaceis.

♀. Elytra virescentia, superne nigra, maculis consuetis (basi 2, in medio utrinque 1, fasciaque transversa in speculo) viridibus, margine apicali et canthis viridibus; campo laterali viridi, macula ultra medium punctoque apicali fuscis.

Variat. Coloribus maculisque plus minus extensis; in desiccatis colore viridi evanescente.

♂. Long. corp. 8; elytr. 5·4 millim.

Hab. GUIANA (*coll. Brunner v. Wattenwyl*: no. 12,430).—[From my manuscript notes.]

The forehead is adorned with a large black band, separated from the vertex by a yellow line joining the eyes. The pronotum bears a yellowish line, shortened on both sides, and other nearly lateral lines, which become fused with the yellowish margins of the lateral lobes and with the yellowish band of the anterior margin. The colour of the feet is very variable, passing from black to rufous. The posterior femora are at the base pale or greenish-brown, this colour terminating in bands, the tip being rufous. The lateral maculæ of the elytra are variable.]

Tribus ŒCANTHINÆ.

Œcanthites, Saussure, Miss. Scient. Mex., Orthopt. p. 428.
Œcanthiens, Saussure, Mél. Orthopt. 6e fasc. p. 534.

A very musical group, characterized as follows:—The elytra of the males always entirely occupied by the tambourine, even in the species with apterous females, in which case they are widely rounded at the tip (Tab. XII. fig. 15). The mediastinal

vein very ramose. The humeral vein repulsed into the lateral field; the *discoidal* vein forming the ridge, arcuate or sigmoidal at the base, leaving a rather wide lateral area between it and the humeral vein; this area often narrowly fusiform, reticulated by transverse nervures in the larger species. The *oblique veins* obliquely transverse, as in the Gryllinæ; the last one not anastomosed at its base to the diagonal vein by an arch, but emerging generally from the *stridulating vein*, as well as from the preceding oblique veins. The *speculum* large; its *involving vein* continuous, and the *involving area* thus not divided into cells.

These insects have very complete stridulating-organs, but produce delicate sounds.

Group **PHALANGOPSITES.**

Phalangopsites, Saussure, Mélang. Orthopt. 6e fasc. pp. 536, 543.

Elegant and light insects, with long legs, these latter allowing them to progress with ease amongst the grass and weeds. The females apterous in several American genera, with a rounded supra-anal plate, and straight and acute ovipositor.

In the elytra of the males the vena diagonalis rarely reaches the anal knot, its base being generally fused with the base of the post-anal vein. The speculum is frequently wide, divided by two or more veins. In the species which have apterous females the elytra of the males are more or less abbreviated, destitute of an apical field, but with the apical margin deflexed downwards, and the hind wings are generally completely wanting. When both sexes are winged the elytra are elongate, and terminated by an apical field. (Tab. XII. fig. 4.)

PROSTHACUSTES, Sauss.

Prosthacusta, Saussure, Miss. Scient. Mex., Orthopt. pp. 430, 436 (1870).
Prosthacustes, Saussure, Mélang. Orthopt. 6e fasc. pp. 536, 545.

In this genus the male elytra are not much shorter than the abdomen, rounded at the tip; with a triangular speculum; the oblique veins about four or more in number; the veins of the lateral field simple and longitudinal (*i. e.*, the mediastinal vein not ramose).

1. **Prosthacustes mexicanus,** Sauss. (Tab. XII. fig. 1.)

Prosthacusta mexicana, Sauss. Miss. Scient. Mex., Orthopt. p. 437. 1, t. 7. fig. 18 (♂).
Prosthacustes mexicanus, Sauss. Mélang. Orthopt. 6e fasc. p. 545.

♀. Gracilis, subcylindricus, rufo-testaceus vel brunnescens, rufo-pubescens. Caput et pronotum rufo-castanea. Palpi albidi, articulis 3°–5° elongatis; ultimo oblique compresso-truncato, infundibuliformi. Pronoti lobi laterales margine infero obliquo, angulo antico minute rotundato. Elytra valde abbreviata, segmenta 3 abdominis tegentia, seseque per marginem suturalem tegentia; campo dorsali fusco-nigro, venis longitudinalibus elevatis 5–6; area humerali pallida; area discoidali irregulariter venulosa; campo laterali testaceo, venis longitudinalibus 4 instructo areaque supera fusca. Alæ nullæ. Pedes fulvo-rufi; anteriores et intermedii supra brunneo-annulati vel maculosi; tibiæ anteriores graciles, latere interno

tympano minuto elliptico instructæ. Femora postica frequenter oblique fusco-rufo lineata. Tibiæ femoribus breviores, supra fusco-maculosæ, ad spinas fusco-punctatæ, utrinque dense spinulosæ. Calcar supero-internum plusquam $\frac{2}{3}$ metatarsi æquans. Metatarsus posticus margine externo 5–6-denticulato. Abdomen fuscum; cercis longissimis, rufis. Lamina supra-analis rotundato-trigonalis, sulcata, basi puncto impresso notata. Ovipositor femoris longitudine, gracilis, subrectus; valvis apicalibus gracillimis, acutissimis, haud serratis; superis rectis, styliformibus; inferis piriformibus.

♂. Depressiusculus. Pronotum anterius leviter coarctatum. Elytra lata, fere abdominis longitudine, in dorso elliptica; campo dorsali fusco, margine apicali luteo; tympano dorsali perfecte explicato; venis obliquis 4; speculo trigonali, antice acutangulo, quam longum haud latiore, per venam flexuosam diviso. Vena post-analis ante medium valde obtusangulata, ramulum ad venam diagonalem prope speculum emittens. Vena post-axillaris prima sensim sigmoidalis; 2ª et 3ª in unam venam subarcuatam confusæ. Abdomen fulvo-testaceum, supra infuscatum. Lamina infra-genitalis elongatiuscula, convexa.

♀. Long. corp. 10; pronot. 2·2; elytr. 3; fem. post. 8; ovipos. 7 millim.

♂. Long. corp. 9; pronot. 2; elytr. 5·5; latit. 4·1; fem. post. 7·5 millim.

Hab. MEXICO, Cordova (*Saussure*), Teapa in Tabasco (*H. H. Smith*).

PARAGRYLLUS, Guér.-Mén.

Paragryllus, Guérin-Méneville, Icon. du Règn. Anim., Ins. p. 329 (1829–1838); Saussure, Miss. Scient. Mex., Orthopt. pp. 430, 441; Mélang. Orthopt. 6ᵉ fasc. pp. 536, 551 (fig. xli., 1*).

A very remarkable genus, on account of the complication of the tympanum of the elytra of the males, and by the fact that the superior internal spur of the hind tibia is tumid and enormously large in this sex (Tab. XII. fig. 5, *c*). Both sexes are completely winged; and the elytra of the males possess a well-developed unmodified apical field. Their tambourine is characterized by numerous oblique veins and by a rounded speculum divided by numerous arched nervures (Tab. XII. fig. 4). The discoidal vein is fused at the base with the humeral vein (as in the genus *Homœogryllus*); the medio-discoidal area is thus very fusiform, and also pointed at the tip.

The *Paragrylli* were hitherto known only from the males. I here give the description of the females of two species, showing that the enormous spur of the hind tibiæ is peculiar to the males, the females having normal spurs, the superior one being only somewhat incrassated, but not abnormal.

The genus is restricted to Tropical America. In addition to the two species enumerated here, a third, *P. martinii*, Guér.-Ménev., is known, from the island of Guadeloupe.

1. **Paragryllus temulentus,** Sauss. (Tab. XII. figg. 2–7.)

Paragryllus temulentus, Sauss. Mélang. Orthopt. 6ᵉ fasc. p. 553. 3 (♂).

Griseo-brunneus. Caput subtus appressum, facie oblique infera. Vertex anterius depressus; ejus rostrum angustum, horizontale, basi ocellos posticos gerens, ac per sulcum a cranio sejunctum. Oculi piriformes, prominuli. Palpi mediocres; ultimo articulo anguste infundibuliformi, recte truncato. Pronotum antice leviter coarctatum; lobis lateralibus nigris vel nigro-variis, margine infero obliquo, arcuato. Elytra abdominis longitudine; campo laterali inter venas nigrescente. Alæ brevissime caudatæ. Pedes fusco-annulati. Femora anteriora compresso-teretia, basi incrassata superne subconvexa; posteriora basi

* ERRATUM: 1, nec 2.

superne incrassata. Tibiæ anticæ compressæ, basi intus tympano instructæ, extus foramine nullo. Tibiæ posticæ quam femora sensim breviores, valde denticulatæ; apice spinis 3:3 instructæ, ac inter spinas denticulis 1:2 crenatæ. Calcaria externa brevia; interna 2 elongata; supero arcuato, quam intermedium paulo crassiore, dimidium metatarsum vix æquante. Metatarsus elongatus, supra extus denticulatus. Abdomen concolor. Lamina supra-analis trigonalis, apice rotundata, supra plana, utrinque oblique carinata, impressionibus 4 crucem in medio interruptam formantibus notata. Cerci longissimi, ♀ ovipositorem valde superantes. Lamina infra-genitalis subtrigonalis, apice arcuatim excisa.

♀. Elytrorum campus dorsalis venis oblique longitudinalibus, in margine suturali desinentibus percursatus. Vena discoidalis basi flexuosa, dimidia parte apicali 5-ramosa; areæ inter ejus ramos jacentes et area medio-discoidalis basi irregulariter reticulatæ; areæ reliquæ transverse venulosæ. Campus lateralis ad inferum reflexum involvens; vena mediastina 7–8-ramosa. Tibiarum posticarum calcaria normalia; internum superum arcuatum, quam intermedium paulo crassius ac valde brevius; intermedium $\frac{1}{3}$ metatarsi æquans. Ovipositor quam femur paulo longior vel illo æquilongus, rectus vel apice deflexus; ejus valvæ apicales breviter lanceolatæ, apice parum acutæ; inferæ rectæ, graciles, apice subhebetatæ, subtus subcrenulatæ; superæ acutiores, basi latiores, styliformes, subtus sinuatæ ac involventes, superne distincte regulariter obtuse denticulatæ.

♂. Elytra in dorso simul sumpta marginibus lateralibus usque ad speculum subrectis, postice leviter divergentibus; venis obliquis 6–7; speculo paulo latiore quam longiore, obtusangulo, transverse elliptico, per venas arcuatas 5–6 diviso; vena postanali angulata; v. postaxillari 1ª sigmoidalis; 2ª arcuata, cum 3ª apice confluente. Margo suturalis in sinu venarum analium macula fusca notatus. Campus lateralis valde involvens; vena mediastina ramis circiter 18 (6–7 primis sigmoidalibus). Tibiarum posticarum calcar supero-internum (fig. 15, *c*) crassissimum, rectum, dilatatum, in utroque latere convexum, quam calcar intermedium paulo longius vel illo æquale, in unguiculo minuto acuto terminatum. Lamina supra-analis (fig. 6) grandis, trigonalis; ejus dimidia pars apicalis depressa, basi in medio bicarinulata; ejus dimidia pars basalis (*l*) tuberculos 2 unciniformes depressos præbens, processus 2 longissimos (*u*), graciles, laminam infra-genitalem (*i*) longitudine æquantes, emittentes.

Var. *a*. Fulvescens, brunneo-varius.—*b*, ♂. Elytra supra hic illic fusco-umbrata.

♀. Long. corp. 19·5; pronot. 4·5; elytr. 19; fem. post. 17·2; ovipos. 19·5 millim.

♂. Long. corp. 21; pronot. 4·7; elytr. 18; latit. campi dorsalis 9; fem. post. 18 millim.

FIGURES:—Fig. 2, the female insect.—Fig. 3, the end of the ovipositor, its valvæ being separated.—Fig. 4, the elytron of the male.—Fig. 5, the end of the hind tibia from the inner face; *t*, tibia; *c*, its superior large spur; *i*, its middle spur; *s*, its inferior spur; *m*, metatarsus.—Fig. 6, the end of the male abdomen from above; *l*, the basal part of the supra-anal plate; *u*, its processes; *o*, the apical part of the supra-anal plate, depressed in a lower plane, with its two carinulæ; *i*, the infra-genital plate.—Fig. 7, the terminal joints of the maxillary palpus.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); COSTA RICA (*Biolley*).—BRAZIL.

[2. **Paragryllus rex,** Sauss.

Paragryllus rex, Sauss. Miss. Scient. Mex., Orthopt. p. 442. 1 (♂); Mélang. Orthopt. 6ᵉ fasc. p. 553. 1, t. 16. fig. xli., 1 (♂).

♀. Fulvo-rufescens; pedibus fusco-annulatis; scutello faciali in longitudinem testaceo 4-fasciato vittaque interoculari pallida. Pronotum gibberosum, fuscum, testaceo-lineato-picturatum; lobis lateralibus anterius angulatis. Elytra abdominis longitudine; vena media 4-ramosa; campus dorsalis venis liberis 5 (2ª basi incompleta), totus venulis transversis reticulatus. Tibiæ anticæ utrinque basi foramine elliptico. Tibiæ posticæ compressæ, spinis 4:4 instructæ; eorum calcaria apice arcuata; interno-superum crassiusculum quam intermedium brevius; hoc dimidium metatarsum æquans. Metatarsus compressus, carinatus, 1:7-dentatus, basi inermis. Ovipositor rectus, femoris longitudine.

♀. Long. corp. 26; pronot. 4·3; latit. 5·1; elytr. 18·5; fem. post. 15·5; tibiar. 12·6; ovipos. 16·5 millim.

Hab. BRAZIL, Pernambuco (*coll. Brunner v. W.*: no. 12,191).

Only the male of this insect was previously known. *P. rex* differs from *P. temulentus*

in having the large spur of the posterior tibiæ somewhat longer in proportion to the metatarsus. The males are more distinct, the elytra of *P. rex* possessing numerous *oblique veins*.]

ECTECOUS, Sauss.

Ectecous, Saussure, Mélang. Orthopt. 6e fasc. pp. 537, 554 (1878).

This genus closely resembles *Prosthacustes* in its general facies, but differs from it in the structure of the head, elytra, and spurs. It is easy to distinguish by the anterior tibiæ being perforated at the outer side only, as in *Hemicophus*, which is of a slender form with long elytra, having a very different elytral tambourine, *i. e.* the speculum elongated *. The elytra of the males are very similar to those of *Paragrylius*, but without apical field.

1. **Ectecous cantans**, sp. n. (Tab. XII. figg. 8, 9, 10.)

Sat parvus, fusco et fulvo irroratus. Caput antice nigrum, ore brunneo, nonnunquam vitta longitudinali repanda flava. Processus scutelli facialis primo articulo antennarum paulo angustior, ad verticem truncatus. Cranium bisulcatum; rostro verticis angusto, parallelo, horizontali. Oculi valde convexi, ovati, ♀ piriformes. Antennæ fuscæ, annulis flavis minutis valde remotis ornatæ, basi pallidiores. Pronotum superne marmoratum, lobis lateralibus fuscis, obliquis, angulo antico vix rotundato. Pedes crassiusculi, fusco fasciati. Tibiæ anticæ extus foramine oblongo, intus nullo. Femora postica oblique fusco lineata; tibiæ fusco fasciatæ, spinis fulvis apice nigris; calcaribus internis 2 æquilongis, quam dimidius metatarsus subbrevioribus. Metatarsus supra denticulis 2 : 5. Abdomen marmoratum, valde pubescens, subtus flavescens. Cerci fusco-testacei.

♀. Aptera. Lamina supra-analis elongato-trapezina, utrinque foveolato-subsinuata. Ovipositor femori brevior; valvis apicalibus ovato-lanceolatis, superis anguste lanceolatis, acutis; inferis, dimidia parte basali, rotundato-dilatatis.

♂. Elytra abdominis apicem liberantia, quadrato-elliptica, fusco-testacea, basi et intus fusco-umbrata, cantho laterali et margine basali testaceis; venis obliquis 4+2 vel 5+3. Speculum transverse ellipticum, per venas 4–5 transversas divisum, quarum anticæ utrinque arcuatæ; angulo anteriore obtusissimo, marginibus anticis subarcuatis. Vena postanalis arcuata, a medio ramulum ad speculum emittens. Vena postaxillaris prima sigmoidalis, cum vena postanali in arcum conjuncta. Vena postaxillaris secunda crassa, submarginalis. Campus lateralis fuscus, margine pallido; vena mediastina dimidia parte apicali 7–8-ramosa; pars basalis campi insuper venis sigmoidalibus 3–4 apice plus minus furcatis prædita. Alæ nullæ. Lamina supra-analis transverse rotundato-trigonalis, valde pilosa. Titillatores crassiusculi.

Var. ♂ ♀. Plus minus flavescens.

♀. Long. corp. 10; pronot. 2·5; elytr. 0; fem. post. 8·8; ovipos. 6·8 millim.

♂. Long. corp. 11·8; pronot. 2·5; elytr. 7·5; fem. post. 11·8 millim.

Figures:—Fig. 8, the male insect.—Fig. 9, the female.—Fig. 10, the end of the ovipositor.

Hab. Mexico, Orizaba (*Mus. Genavense*: ♀).—Guiana, Cayenne [♂].

This insect nearly approaches *E. hedyphonus*, Sauss., from Brazil, the type of which is not available for examination. The latter has the superior inner spur of the hind tibiæ longer than the intermediate one, the ovipositor of the female as long as the hind femur, and the speculum in the male more triangular. It is not unlikely that they are varieties of the same species.

* *Hemicophus paranæ*, Sauss., loc. cit. p. 773. 1, ♂, nec ♀.

AMUSUS, Sauss.

Amusus, Saussure, Mélang. Orthopt. 6e fasc. pp. 537, 558 (1878).

This genus is characterized in both sexes by its short corneous elytra, which are quite polished and without veins in the dorsal field. In the males there is only a trace of a stridulating vein. The anterior tibiæ present one or two drums. The inner superior spur of the hind tibiæ is much the longest.

1. **Amusus mexicanus**, sp. n. (Tab. XII. figg. 11, 12, 13.)

♀. Fusco-nigra, polita. Caput et pronotum nigra; vertex anterius ad ocellum primo articulo antennarum æquilatus. Ocelli minuti. Antennæ fuscæ, apice pallidiores, in medio annulis albis 3 (intermedio longiore); parte basali longiuscule (articulis 20) aurantia, articulis 1°–2° nigris. Palpi picei, articulo quarto supra linea lutea. Pronotum nigrum, margine postico supra punctisque 2 ad marginem anticum aurantiis; lobis lateralibus immaculatis, margine infero subhorizontali, arcuato. Elytra brevia, supra subquadrata, polita, venis nullis, primum abdominis segmentum partim tegentia, sese intus leviter tegentia, margine postico leviter obliquo; campo marginali fusco, venis longitudinalibus 4. Alæ nullæ. Pedes fusco-nigri, pilosi. Tibiæ anticæ in latere interno foramine elliptico, in latere externo foramine nullo. Femora postica brevia. Tibiæ illis paulo breviores, fusco-rufæ; spinis 4 : 4 rufis; inter spinas intus spinulis 3, 3, 1; extus 5, 4, 3 (variabiles); calcare supero-interno longissimo, metatarso tamen paulo breviore. Metatarsus gracilis, 9 : 7-dentatus. Abdomen rufo-castaneum vel flavescens, plus minus fusco-maculosum. Lamina supra-analis trigonalis, apice rotundata, marginibus lateralibus sinuatis, subreflexis; basi puncto impresso. Cerci rufi, mediocres, ovipositore æquilongi. Lamina infragenitalis leviter incisa. Ovipositor quam femur brevius, rectus, flavescens, valvis apicalibus basi haud dilatatis, anguste lanceolatis, acutis, haud serrulatis.

♀. Long. 13·5; pronot. 3·5; latit. 4; elytr. 4·2; fem. post. 11·5; ovipos. 10.

Figures.—Figs. 11, 12, the insect, ♀.—Fig. 13, the terminal joints of the maxillary palpus.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

Somewhat smaller than *A. kirschianus*, Sss. (from Venezuela), with a different coloration, and very distinct from it by the fact that the anterior tibiæ have no drum on the outer side, while in *A. kirschianus* the tibiæ are perforated on both sides.

AMPHIACUSTES, Sauss.

Amphiacusta, Saussure, Miss. Scient. Mex., Orthopt. p. 444 (1870).
Amphiacustes, Saussure, Mélang. Orthopt. 6e fasc. p. 569.

Acrobatic insects, furnished with long legs. The females apterous; with a straight ovipositor, terminated by acute entire valvæ, *i. e.* not serrulated. The males with abbreviated rounded elytra and without wings; the elytra presenting 4–6 *oblique veins*; the speculum generally divided by two veins; the venæ postanales variable.

Synopsis specierum.

I.

a. Pedes longi. Tibiæ intermediæ calcaribus 3.

b. Tibiæ posticæ supra spinis 5 : 5 armatæ. Foveolæ juxta-ocellares nullæ. Verticis rostrum cum plano arcuato verticis continuum, apice primo articulo antennarum

æquilato ; scutelli facialis processus interantennalis itaque latus, trapezinus.—Elytrorum ♂ vena postanalis recta, tantum basi arcuata, prope basin ramulum ad v. diagonalem emittens. Speculum transversum, asymmetricum.

c. Color nigro-castaneus. Verticis rostrum quam primus articulus antennarum latius. Elytra ♂ majora, lata, fusco-nigra, speculo valde asymmetrico.—1. *toltecus*, sp. n.

cc. Color fulvo-fuscescens. Verticis rostrum primo articulo antennarum æquilatum. Elytra ♂ minora, angustiora, ferruginescentes, speculo modice asymmetrico.—2. *aztecus*, Sss.

bb. Tibiæ posticæ supra spinis 4 : 3 vel 4 : 4 armatæ. Verticis rostrum quam primus articulus antennarum angustius. Scutelli facialis processus interantennalis angustior. Elytrorum ♂ vena postanalis ramum ad speculi angulum anticum emittens.

c. Elytrorum ♂ vena postanalis subrecta, tantum basi incurva, sicut in *azteco*, ramulum prope ejus basin emittens. Vertex ad basin rostri depressus ; rostrum angustum a vertice per sulcum sejunctum.—[3. *caraibeus*, sp. n. (Guadeloupe I.).]

cc. Elytrorum ♂ vena postanalis in medio angulatim fracta, ab angulo ramum rectum ad speculi angulum anticum emittens. Pronoti lobi laterales magis angulati, margine infero oblique subrecto.

d. Vertex cum rostro continuus, leviter oblique planatus. Elytra fere dimidium abdomen liberantia, fusco-ferruginea, venis luteis. Statura media.—[*annulipes*, Serv. (Cuba).]

dd. Vertex anterius depressus ; ejus rostrum ab illo per sulcum transversum sejunctum. Foveolæ postocellares distincte explicatæ.

e. Statura præcedentium.

f. Elytrorum ♂ speculum trigonale ; venæ obliquæ 3.—[5. *fuscicornis* *, Serv. (Brasilia).]

ff. Elytrorum speculum ellipticum ; venæ obliquæ 5–6.—[6. *aranea*, Sss. (San Domingo).]

ee. Statura valida. Mares ignoti.—[7. *grandis*, Sss. (Cuba).]

aa. Pedes longissimi, lineares. Tibiæ intermediæ apice calcaribus tantum 2 ; posticæ supra spinis 4 : 4, calcaribus longis. Elytrorum ♂ vena postanalis ramum nullum emittens.—8. *phalangium*, Sss.

II.

1. *Vertex ad basin ejus rostri* :

a. haud depressus.

b. Rostrum latiusculum ; vertex utrinque pone antennas haud foveolatus.—1. *toltecus* ; 2. *aztecus*.

bb. Rostrum angustius ; vertex utrinque pone antennas leviter foveolatus.—[*annulipes*.]

aa. depressus. Rostrum angustum. Vertex pone antennas utrinque foveolatus.—*Reliquæ species*.

2. *Elytrorum ♂ vena postanalis* :

a. recta, basi incurva :

b. ramulum ad venam diagonalem emittens.—1. *toltecus* ; 2. *aztecus*.

bb. ramulum nullum emittens.—4. *phalangium*.

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* Erratum : Miss. Scient. Mex., Orthopt. p. 448, *instead of* orné *read* armé.

aa. angulatim fracta, ramum ad angulum speculi emittens.—[*annulipes*]; [*fuscicornis*]; [*aranea*].

3. *Elytrorum ♂ vena postaxillaris prima*:
   a. recta, basi incurva.—1. *toltecus*; 2. *aztecus*.
   aa. sigmoidalis.—[*annulipes*]; 4. *phalangium*.
   aaa. in medio incurva.—[3. *caraibeus*].

4. *Elytrorum ♂ speculum*:
   a. Vena diagonalis cum margine antico-externo speculi angulum obtusissimum formans. Speculum transversum, symmetricum.—[*annulipes*]; [*fuscicornis*]; [*aranea*].
   aa. Vena diagonalis cum margine antico-externo speculi continua.
      b. Speculum symmetricum.—[3. *caraibeus*]; 4. *phalangium* (quam longum parum latius).
      bb. Speculum asymmetricum, transversum:
         c. valde asymmetricum.—1. *toltecus*.
         cc. parum asymmetricum.—2. *aztecus*.

5. *Pronoti lobi laterales*:
   a. parum obliqui, angulo anteriore rotundato, margine inferiore arcuato.—1. *toltecus*; 2. *aztecus*.
   aa. obliqui, anterius acutanguli (angulo hebetato), margine infero obliquo, subrecto.—[*annulipes*]; 3. *caraibeus*; [*fuscicornis*]; [*aranea*]; [*grandis*].
   aaa. intermedii, angulo anteriore sat rotundato.—4. *phalangium*.

6. *Lamina supra-analis marium*:
   a. truncata, plus minus trapezina;
      b. marginibus lateralibus in medio angulatis.—2. *aztecus*.
      bb. marginibus lateralibus utrinque processu styliformi cylindrico instructis.
         c. processibus majusculis, in marginibus mediis exsertis, laminam dimidia longitudine superantibus.—1. *toltecus*.
         cc. processibus subapicalibus, brevibus.—[*annulipes*].
   aa. longiuscula, apice incisa, valde pubescens.—[3. *caraibeus*].
   aaa. parabolica, rotundata, angulis apicalibus explicatis.—4. *phalangium*.

1. **Amphiacustes toltecus,** sp. n. (Tab. XII. figg. 14–17.)

♂. Fusco-testaceus, statura *A. azteci*. Caput et pronotum fusco-nigra. Antennæ fusco-nigræ, annulis luteis minimis, invicem longe remotis ornatæ, parte basali fulva. Caput anterius nigrum, margine laterali et ore flavido-pictis lineaque utrinque faciei flavida; palpis brunneis. Processus scutelli facialis ad ocellum flavido-marginatum. Cranium convexum, pone antennas utrinque vix excavatum; rostro quam primus articulus antennarum fere latiore; vertice lineis 2, occipite maculis 3 flavidis. Oculi ovati, inferius anguste rotundati, haud piriformiter acuminati. Pronotum immaculatum, nigrum, margine postico rufido; disco in linea media impressionibus 3, in medio transverse strigato. Lobi laterales margine infero toto arcuato, retro haud obliquo, recto, parum ascendente, angulo anteriore parum rotundato. Elytra quam in *A. azteco* ac in *annulipede* latiora ac longiora, tantum abdominis apicem liberantia, fusco-rufo-testacea; venis obliquis 6; speculo transverso, margine antico-interno longo, margine antico-externo duplo breviore, angulo antico parum obtuso, fere subrecto. Venula a basi venæ postanalis ad venam diagonalem emissa, longiuscula, ultra medium venæ diagonalis cum illa confluens. Campus lateralis basi subcoriaceus, venis 3–4; vena mediastina insuper ramis 9–12, apice incrassatis instructa. Pedes antici nigri, saltem tibiis flavo-annulatis. Femora postica fusca, basi testacea, illis *A. azteci* similia; tibiæ fusco-nigræ; calcare interno-intermedio $\frac{3}{4}$ longitudinem metatarsi æquante. Tarsi 1, 2 basi breviter flavi. Metatarsus posterior supra 2 : 6-denticulatus. Abdomen fuscum, subtus sordide ocraceum. Lamina supra-analis

planula, utrinque sinuata, apice truncata, in sinibus utrinque processu cylindrico instructa. Cerci fusci. Lamina infra-genitalis longiuscula, maxime convexa, sacculiformis, in medio impressione fusiformi, apice subincisa, excavata, ad superum reflexa. Titillatores 2 apice extus acute dentiformes.

Long. corp. 15·5; pronot. 2·5; latit. 5; elytr. 10·5; latit. in dorso 7·5; fem. post. 15·5 millim.

FIGURES.—Fig. 14. The male insect.—Fig. 15. The dorsal field of the elytron; *s*, the speculum, divided by two veins; *a'*, the postanal vein.—Figg. 16, 17. Titillator seen from both sides.

Amphiacusta azteca, var., Sauss. Miss. Scient. Mex., Orthopt. p. 450, var. ♀.

♀. Fusco-castanea, subtus fulvescens; pronoto et abdomine supra linea longitudinali lutea. Pedes fusco et luteo annulati. Femora postica fulvo-testacea; extus inferius oblique fusco lineata, superne vitta longitudinale fusca (sicut in *azteco*). Lobi laterales pronoti rotundati, minus angulati quam in *azteco*, angulo antico latius rotundato.

♀. Long. corp. 16; pronot. 4; fem. post. 19; ovipos. 17–18 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*), Cordova (*Saussure*).

A species closely allied to *A. aztecus*, from which it may be known by the vertex having a broader rostrum, especially in the males; the inferior margin of the lateral lobes of the pronotum less straight and not oblique; and the larger, differently formed male elytra. In *A. aztecus* the elytra of the males have four or five oblique veins only; the speculum is nearly symmetrical, its anterior margins being not very unequal; the lateral field has only 8–12 costal veins, which are rather irregular and obsolete, and not incrassated at the ends; the supra-anal plate is destitute of a process; and the infra-genital plate is shorter.

2. **Amphiacustes aztecus**, Sauss. (Tab. XII. fig. 18.)

Phalangopsis azteca, Sauss. Rev. et Mag. Zool. ix. p. 209 (♀) (1859).

Amphiacusta azteca, Sauss. Miss. Scient. Mex., Orthopt. p. 449. 4 (♂ ♀) (*A. mexicana*, per errorem), t. 8. figg. 39, 39 *a* (♀).

Quam *A. toltecus* minus crassus; fusco-testaceus, rostro verticis angustiore; lobis lateralibus pronoti paulo minus rotundatis. Elytra marium minora, dimidium abdomen liberantia ac minus lata; speculo minus asymmetrico; venis obliquis 4–5; vena postaxillaris 1ª ramulum brevem transversum ad venam diagonalem emittens. Lamina supra-analis utrinque in marginibus lateralibus angulum prominulum præbens.—*Cf.* Synops. spec. II., suprà p. 246.

Aberratio. Elytrorum ♂ vena postanalis venulam subtilem ad speculum emittens.

FIGURE.—Fig. 18. The terminal joints of the maxillary palpus, characteristic of the genus.

Hab. MEXICO, Vera Cruz, Cordova, Orizaba (*Saussure*).

[3. **Amphiacustes caraibeus**, sp. n.

Amphiacustes aranea, var., Sauss. Mélang. Orthopt. 6ᵉ fasc. p. 572 (♂).

♂. *A. azteci* staturæ et formis, pedibus tamen longioribus. Fulvescens. Caput cranio brevi, transverso, rotundato, vertice anterius depresso, detruso, a rostro per sulcum transversum sejuncto; rostro horizontali, angusto, subsulcato; scutelli facialis processu interantennali itaque angusto. Palpi gracillimi, longissimi. Pronoti lobi laterales, margine infero subrecto. Elytra minora, sicut in *A. azteco*, vix dimidium abdomen tegentia. Vena postanalis basi arcuata, prope basin ramum venæ diagonali parallelum ad speculi angulum emittens. Venæ obliquæ 4. Speculum vix transversum, symmetricum, angulo antico subrectangulo; per venam unicam extus arcuatam, utrinque in margine postico speculi exsertam, divisum.

Pedes longi, brunneo marmorati. Tibiæ posteriores supra spinis 3 : 4. Lamina supra-analis parallela, incisa.

Long. corp. 16; pronot. 3·3; elytr. 7; fem. post. 17 millim.

Hab. ANTILLES, Guadeloupe I. (*Mus. Genavense*).]

4. **Amphiacustes phalangium,** Sauss. (Tab. XII. fig. 19.)

Amphiacusta phalangium, Sauss. Miss. Scient. Mex., Orthopt. p. 450 (♂); Mélang. Orthopt. 6e fasc. p. 571.

♂. Corpus parvum, rufo-ferrugineum. Scutelli facialis processus verticalis quam primus articulus antennarum latius. Verticis rostrum primo articulo antennarum fere dimidio angustius; vertex utrinque ad illum excavatus sicut in *A. caraïbeo*. Pronotum supra impressione transversa late trigonali notatum, lobis lateralibus obliquis, angulo antico valde rotundato. Elytra minora, dimidium abdomen liberantia, parum lata, parum diaphana, venis obliquis 3; vena postanali recta, ramulum nullum emittente; v. postaxillari sigmoidali; speculo subrhomboidali æque longo ac lato, per venas 1 vel 2 diviso; campus lateralis venis costalibus circ. 8. Pedes longissimi, gracillimi; femora antica corpore æquilonga; postica tantum dimidia parte basali incrassata. Tibiæ anticæ utrinque foramine minuto, frequenter obliterato. Tibiarum posticarum calcar interno-intermedium paulo brevius quam dimidius metatarsus; calcar superum quam intermedium fere dimidio brevius. Metatarsus spinulis 3 : 8 crenatus. Lamina supra-analis elongato-trapezina; lamina infra-genitalis apice subincisa.

Var. Elytri speculo tantum postice per venas 2 transversas diviso, de reliquo variabili.

♂. Long. corp. 1·25; pronot. 3; elytr. 5·3; fem. ant. 14; fem. post. 21; tib. post. 20 millim.

Hab. GUATEMALA (*Mus. Genavense*).

A very remarkable species, on account of its enormously long and thin legs, exaggerating the extreme forms of *Arachnomimus*, imitating those of the cave *Rhaphidophora*. This insect might be equally well placed in the genus *Arachnomimus*, the anterior tibiæ being often destitute of a tympanum on both sides. When an insect takes an exaggerated aberrant form, the generic characters often show a tendency to become more or less effaced by the effect of adaptation (the same remark applying also to the specific characters—*vide varietatem*).

ENDACUSTES, Brunn.

Endacusta, Brunner v. Wattenwyl, Mittheil. Schweiz. ent. Ges. iv. p. 167 (1873).
Endacustes, Saussure, Mélang. Orthopt. 6e fasc. pp. 537, 575.

The diagnosis of this genus requires modification:—The inner spurs of the hind tibiæ are variable in size, the superior spur being sometimes shorter, sometimes longer than the intermediate one. In *E. irrorata* the superior spur is the longest; in the Mexican species it is the intermediate one which is the longest, as in the genus *Endecous*. *Endacustes* differs, however, from that genus in the relative length of the outer spurs—the superior spur being the longest in *Endecous*, and the intermediate one in *Endacustes*. The two genera are very closely allied, and might be treated as one.

1. **Endacustes aztecus,** sp. n. (Tab. XII. figg. 20–22.)

Crassiusculus, superne fuscescens. Caput antice et in lateribus luteo-multipictum, superne fuscum. Cranium postice breve, antice ad basin rostri depressum; verticis rostro plano, quam primus articulus antennarum angustiore. Scutelli facialis processus dimidiam altitudinem ejus æquans, superne attenuatum, primo articulo antennarum æquilatus. Oculi prominuli, piriformes. Palpi (fig. 22) gracillimi, longissimi, supra lutei. Antennæ longissimæ, fusco-rufæ, annulis minimis luteis 6–7, invicem longe remotis, ornatæ. Pronotum fuscum, rufo-hirtum, ac fusco-pilosum, supra leviter depressum, per sulcum latiusculum longitudinalem divisum et utrinque sulco transverso notatum; margine posteriore transverso, subsinuato. Lobi laterales valde obliqui; margine infero arcuato, retro valde ascendente, angulo antico minute rotundato. Pronoti limbus posterior etsi in lobis lateralibus necnon limbus anterior loborum lateralium flavo-lutei (vel si mavis: limbus totus pronoti flavidus, exceptis margine anteriore supra et angulo loborum lateralium), margine immo toto anguste fusco; lobi laterales insuper maculis 1 vel 2 flavidis. Pedes longi, fusco-fasciati. Tibiæ anticæ in latere interno tympano minore rotundato-elliptico instructæ. Femora postica gracilia, in parte $\frac{2}{5}$ apicali linearia, extus vittis obliquis fuscis 3 lineaque longitudinali, fuscis; intus venuste fusco et fulvo marmorata, basin versus superne fusco-reticulata vel fulvo-maculosa. Tibiæ fuscæ, valde spinulosæ spinisque mobilibus 4:4 alternis, fulvis, apice curvatis, instructæ; ultima spina interna minima. Calcar interno-intermedium plusquam dimidium metatarsum longum; superum quam intermedium $\frac{1}{3}$ vel plus brevius. Metatarsus margine supero-externo spinulis 9–10 armatus; tertia parte basali inermi; subtus haud distincte carinatus. Abdomen fuscum, supra obsolete fulvo-irroratum, fulvescenti-sericeum. Cerci brunnei, basi rufescentes.

♀. Aptera. Lamina infra-genitalis trapezina, obtuse incisa. Ovipositor rectus, quam femur brevior, basi incrassatus, apicem versus gradatim attenuatus, valvulis apicalibus minutis, lanceolatis, simul sumptis subtus subsinuatis, haud serrulatis. Cerci ovipositore longiores.

♂. Elytra supra breviter elliptica, abdominis apicem liberantia, latiuscula, rufescentia. Tympanum venis obliquis 3. Speculum irregulariter trigonale, venulis irregularibus venulosum. Venæ postanalis et postaxillaris prima arcuatæ; illa ramulum ad venam diagonalem, alteram transversum ad speculum emittens. Pars interna elytrorum subreticulosa. Campus lateralis niger, margine costali vitta sulfurea, in margine postico elytri anguste producta, ornato; vena mediastina ramos obliquos irregulares emittente. Alæ nullæ. Lamina supra-analis subquadrata, retro leviter coarctata, marginibus lateralibus pliculatis. Lamina infra-genitalis compressa, a latere truncata (quando deplicata: subbilobata).

♀. Long. corp. 14; pronot. 3; fem. post. 17·5; ovipos. 13 millim.

♂. Long. corp. 14; pronot. 3; elytr. 7; femor. post. 18 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

This insect is very different from the Australian members of the genus. It has still longer legs than *E. australis*; the anterior and intermediate femora are quite slender, while in *E. australis* they are somewhat incrassated at the base. In *E. australis* the shield-shaped area of the face is higher, and its process towards the vertex is not so much attenuated, and more widely truncated at the top; the palpi are much shorter and less slender; and the elytra of the male are one-half shorter, with five or six oblique veins, &c.

In *E. irroratus* the legs and palpi are much shorter and thicker; the hind femora are scarcely linear at the apex; the process of the vertex is shorter and triangularly truncate; the two superior inner spurs of the posterior tibiæ are of equal length, or the superior is the longest; the ovipositor is not attenuated at the tip; the elytra of the male are much smaller, covering only half of the abdomen, and have 7–8 *oblique veins*, and the tympanum is regularly triangular.

ARACHNOMIMUS, Sauss.*

Arachnopsis, Saussure, Mélang. Orthopt. 6e fasc. pp. 537, 582 (1878) (nomen præocc.).

This very remarkable genus is unfortunately only known from immature specimens. It is, however, well characterized by its very long legs. The anterior tibiæ are destitute of drums, as in the genus *Cophus*, from which *Arachnomimus* differs in the form of the pronotum. The spurs of the hind tibiæ are like those of *Amphiacustes*: the superior inner spur is much shorter than the intermediate spur, a character separating it from *Phalangopsis* (another imperfectly known genus). *Arachnomimus* may be known from *Phalangopsis* and *Endacustes* by the fact that the superior part of the facial shield is broad, as in *Amphiacustes*, while in the neighbouring genera it joins the vertex by a narrow process. The females are certainly apterous, and the males are not unlikely to be apterous also. These insects are most interesting as representing the cavicolous type of the Gryllidæ, imitating the very slender forms of the Locustidæ which live in caves†. The genus was known only from India, but it will probably be found in the caves of different parts of the world. The name *Arachnopsis* being preoccupied in Crustacea, it is necessary to change it.

1. **Arachnomimus cavicola,** sp. n. (*Arachnopsis cavicola*, Tab. XII. fig. 23.)

♀ *subimago*. Apterus, gracilis, fulvo-ochraceus, superne obsolete brunneo umbratus. Antennæ concolores. Caput anterius in medio fusco-rufo umbratum. Cranium brevissimum, transversum. Vertex inter scrobicula antennarum anguste productum. Scutelli facialis processus quam primus articulus antennarum duplo latior, margine supero incisura minuta utrinque, lobo medio retroflexo, ac in plano supero cum rostro verticis conjuncto. Primus articulus antennarum grandis, quam latus fere duplo longus. Oculi anguste piriformes. Palpi longi; ultimo articulo apice oblique infundibuliformi. Pronotum sellæforme, in dorso impressionibus nonnullis; lobis lateralibus obliquis, scilicet margine infero postice adscendente, subarcuato, angulo anteriore valde rotundato. Pedes gracillimi, longissimi, obsolete brunneo-fasciati. Tibiæ anticæ tympano nullo. Femora postica fere dimidia parte apicali linearia. Tibiæ subtilissime spinulosæ, spinis mobilibus 4 : 4 brevibus. Calcaria gracilia; interna : intermedium longum, brevius tamen quam dimidium metatarsum; superum illo dimidio brevius; inferum minutum. Calcaria externa brevia: intermedium quam interno-superum brevius, reliqua 2 minuta. Metatarsi omnes longissimi; postici piloselli, superne inermes vel in margine externo apicem versus spinulis obsoletis instructi. Abdomen subcylindricum; lamina supra-analis elongato-trigonalis, apice rotundata, marginibus reflexis. Cerci longissimi. Lamina infra-genitalis trapezina. (Ovipositor verisimiliter elongatus.)

♀ *nympha*. Long. corp. 11; pronot. 2·2; fem. post. 10·8; tib. post. 12; ovipos. 3 millim.

Hab. GUATEMALA, Cave of Lanquin in Vera Paz (*Champion*).

The only specimen captured by Mr. Champion is unfortunately immature, but, except the ovipositor, which is still short and thick, it is evident that all the described characters would be found in the imago.

Tribus ŒCANTHINÆ.

Œcanthites, Saussure, Mélang. Orthopt. 6e fasc. pp. 538, 590.

Delicate insects of whitish-green colour and slender forms. The legs not much

* ἀράχνη, aranea; μῖμος, imitator.

† Compar. *Amphiacustes phalangium*, p. 249.

elongated. Both sexes completely winged. The ovipositor of the females straight, obtuse and indented at the tip. The elytra of the males elongated, but rounded at their extremity, completely occupied by the tambourine, hyaline; the diagonal vein straight from the anal knot up to the stigma; the speculum elongate, asymmetric, divided by a straight vein parallel to its anterior-internal margin, the apical margin more curved than a half-circle; the post-anal and post-axillar veins nearly straight, the first post-axillar vein hooked at its extremity, so as to anastomose with the second, and sending 2–3 small branches to this vein; the *oblique veins* 3 or 2+2, obliquely transverse, the last one arcuate. The membrane of the elytra forming delicate sinuous folds.

ŒCANTHUS, Serville.

Œcanthus, Serville, Rev. Méth. p. 38 (1831) ;—Brullé ;—L. H. Fischer ;—Scudder ;—de Saussure ;—Brunner v. W.

Œcanthus is sufficiently distinguished by its facies (see Saussure, Mélang. Orthopt. 5e fasc. t. 15. fig. xxxiv. ♀, and 6e fasc. t. 16. fig. xliii. ♂). Most of the species resemble each other very closely, and some of them cannot be separated with certainty.

Synopsis specierum.

I.

a. Pronotum ad marginem posticum per sulcum transversalem nullum divisum, tantum sulco obsoleto notatum; ejus discus scutello postice rotundato, antice obsoleto notatus. Lobi laterales pronoti margine infero subrecto. Elytra immaculata. Alæ brevius caudatæ.

b. Antennarum articuli 1, 2 subtus tuberculo obsoleto, nigro-punctato. Pronotum breviusculum.—1. *niveus*, de G.

bb. Antennarum articuli 1, 2 subtus haud tuberculati.

c. Antennæ luteæ, corpori concolores. Scutellum pronoti sulco divisum.

d. Articulus primus antennarum subtus vitta et macula nigris, secundus macula nigra. Pronotum breve, planulum.—2. *argentinus*, Sss.

dd. Antennarum articuli 1, 2 lineola subtili nigra.

e. Gracillimus; pronoto longiusculo, gracili. Alæ caudatæ.—5. *varicornis*, Walk.

ee. Crassiusculus; pronoto breviusculo. Alæ quam elytra breviores.—[4. *lineolatus*, sp. n. (Brazil).]

cc. Antennæ nigræ vel rufidæ, articulis 1, 2 rufis, margine interno subtus fusco. Scutellum pronoti postice in medio sulcis 2 brevibus distinctissimis impressum.—3. *nigricornis*, Walk.

aa. Pronotum elongatum, antice angustum, postice per sulcum profundum transversum suturalem divisum. Litura marginis postici et marginis antici crasse punctata. Antennarum articuli 1–2 subtus apice tuberculati. Loborum lateralium margo inferus subsinuatus, pone medium lobatus. Alæ longe caudatæ. Elytra punctis 1 vel 2 fuscis notata.—6. *bipunctatus*, de G.

II.

Elytra marium.

Venæ mediastina, humeralis et discoidalis :

a. subrectæ, parum inflexæ. Area humero-discoidalis anguste fusiformis, apice ad stigma minute truncata. Area medio-discoidalis normalis, angusta, dorsalis. Speculum antice rectangulum, postice fere semi-orbiculariter arcuatum, margine interno sub-biundato, scilicet ad exsertionem venæ dividentis minute inciso (Sauss. Mélang. Orthopt. 5e fasc. t. 16. fig. xliii.). Vena dividens margine anteriore parallelo. Vena involvens tota libera; area involvens propterea completa. Vena obliqua postica intus evanida, venam diagonalem haud attingens, in vena stridulante exserta vel cum illa conjuncta. Vena postanalis ramulum subtilem obliquum ad venam diagonalem emittens. Campi lateralis venæ costales oblique rectæ, in vena mediastina uncinatim exsertæ.

b. Speculum latiusculum, antice subobtusangulum, postice semi-orbiculare; margo internus sensim sub-biundatus.—1. *niveus*; 2. *argentinus*; 3. *nigricornis*; [4. *lineolatus*].

bb. Speculum subelongatum, antice rectangulum, postice subparabolicum; ejus margo internus vix biundatus.—5. *varicornis*.

aa. valde curvatæ, ad laterum dejectæ; area mediastina hoc propter angusta. Vena humeralis cum v. mediastina contigua. Vena discoidalis basi longe cum vena humerali fusa; area humero-discoidalis itaque basi acutissima, sed apice tota latitudine truncata. Area medio-discoidalis latissima, rhomboidalis, lateralis, rugulosa. Speculum longiusculum, antice acutangulum; margine interno continuo, haud undato, margine postico parabolico; ejus vena dividens intus a margine anteriore sensim divergens. Vena involvens extus cum margine speculi fusa; area involvens propterea extus nulla. V. obliqua postica completa, ad nodum analem perducta. Vena postanalis ramulum fortem subtransversum ad v. diagonalem emittens. Campi lateralis venæ costales valde sigmoidales.—6. *bipunctatus*.

1. **Œcanthus niveus,** de Geer.

Gryllus niveus, de Geer, Mém. Ins. iii. p. 522. 6, t. 43. fig. 6 (♀) (1773).

Œcanthus niveus, Serv. Orthopt. p. 361;—Harris;—Scudder;—Fitch;—de Saussure.

Scutellum pronoti disci orbiculare, antice obsoletum, sulco divisum.

Var. *a.* Tibiarum posticarum spinæ frequenter apice nigræ.—*b.* ♂. Antennarum primus articulus in una antenna nigro-bipunctatus. Elytra latiora. Spinæ ac spinulæ tibiarum posticarum omnes apice nigræ; femora postica supra ante apicem lineola nigra.

Hab. North America, United States.—Mexico, Ciudad in Durango 8100 feet (*Forrer*), Chilpancingo, Amula, and Xucumanatlan in Guerrero, Teapa in Tabasco (*H. H. Smith*); Guatemala, Senahu and San Gerónimo in Vera Paz, Guatemala city, Capetillo (*Champion*).—Cuba.

2. **Œcanthus argentinus,** Sauss.

Œcanthus argentinus, Sauss. Miss. Scient. Mex., Orthopt. p. 460. 2 (♀).

Habitus et statura *Œ. nivei.* Caput modice longum. Antennarum primus articulus subtus tuberculo nullo, sed vitta nigra longitudinali apice extus cum macula confusa ornatus; secundus articulus subtus macula

nigra. Pronotum breviusculum, supra deplanatum, crassiusculum, scutello disci illo *Œ. nivei* conforme; posterius ante basin sulcis 3 longitudinalibus postice in arcum conjunctis notatum; loborum lateralium margine inferiore subrecto vel leviter arcuato. Alæ breviter caudatæ.

Var. Primus articulus antennarum subtus linea ac puncto nigro libero ornatus.

Hab. NORTH AMERICA, Dallas in Texas.—MEXICO, Ciudad in Durango, Mazatlan (*Forrer*).—? ARGENTINA.

This species was described upon two specimens labelled as from Argentina; but the locality requires confirmation, to judge from the fact that numerous specimens have been found in the central parts of America.

3. **Œcanthus nigricornis,** Walk.

Œcanthus nigricornis, Walk. Cat. Derm. Salt. i. p. 93. 2 (♀); Sauss. Miss. Scient. Mex., Orthopt. p. 461. 4.

Œ. niveo simillimus at major. Caput retroproductum. Antennæ plerumque totæ nigræ, articulis 1°–2° testaceis; vel rufis, primo articulo in *margine interno* linea fusca obsoleta. Pronotum supra planum, quam in *Œ. niveo* paulo longius; ejus scutellum subquadratum, antice complete apertum, ad marginem posticum in medio sulcis 2 brevibus impressum. Alæ breviter caudatæ.

Var. Antennæ rufescentes, apice testaceæ.

Hab. MEXICO, Ciudad in Durango (*Forrer*), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*), Jalisco (*Schumann*), Temax in North Yucatan (*Gaumer*).

The antennæ of most of the specimens are black, but in others they are paler; the two basal joints are rufo-testaceous, with their inner margin brown.

[4. **Œcanthus lineolatus,** sp. n.

♂. *Œ. niveo* simillimus. Differt ab illo antennarum articulis primo secundoque subtus lineola subtili nigra, sicut in *varicorni*. Alæ elytris breviores, in requiete haud perspicuæ. (Pronoti scutellum illo *Œ. nivei* conforme.) *Œ. californico*, Sss., formis et alis simillimus; differt tamen pictura antennarum et pronoti scutello.

Long. corp. 10–11; pronot. 3; elytr. 10; fem. post. 7·8 millim.

Hab. BRAZIL, Rio Grande do Sul (*Dr. Ihering*, *Mus. Genavense*).

Œ. californicus, Sauss., much resembles this species; it also has the wings somewhat abbreviated, but the first joints of the antennæ are without black markings.]

5. **Œcanthus varicornis,** Walk. (Tab. XII. figg. 24, 25.)

Œcanthus varicornis, Walk. Cat. Derm. Salt. i. p. 94. 4 (♂); Sauss. Miss. Scient. Mex., Orthopt. p. 460. 3 (♀).

? *Œcanthus peruvianis,* Walk. loc. cit. p. 95. 8 (♂).

Gracillimus. Articuli 1us–2us antennarum subtus lineola angusta longitudinali nigra. Caput elongatum, occipite retroproducto, quam genæ infra oculos longiore, sensim ut in *Œ. bipunctato*. Oculi elliptici, quam in *Œ. niveo* paulo longiores. Palpi graciles. Pronotum gracile, elongatum, marginibus lateralibus subrectis; scutello dorsale leviter ovato, paulo longius quam lato, antice aperto. Alæ longiuscule caudatæ.

♀. Elytra in dorso remote reticulata.

♂. Elytra quam in præcedentibus paulo angustiora, speculo subacutangulo, postice potius parabolico quam semiorbiculari.

♀. Long. corp. 13; pronot. 3; elytr. 13–14; fem. post. 10; ovipos. 5·2 millim.

♂. Long. corp. 16; pronot. 3·2; elytr. 14; fem. post. 11 millim.

FIGURES:—Fig. 24. The head, pronotum, and part of the thorax.—Fig. 25. The head from in front.

Hab. MEXICO, Tepic, Atoyac in Vera Cruz (*Schumann*), Cordova (*Höge*); GUATEMALA, San Gerónimo (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—? PERU.

This species closely approaches the slender forms of *Œ. bipunctatus*. The pronotum is elongated and slender, but less suddenly widened behind than in *Œ. bipunctatus*. The tambourine of the male elytra belongs to the type of *Œ. niveus*. The first two joints of the antennæ are adorned beneath with a slender black line, the line on the second joint being short.

6. **Œcanthus bipunctatus,** de Geer.

Gryllus bipunctatus, de Geer, Mém. Ins. iii. p. 523. 7, t. 43. fig. 7 (♀) (1773).

? *Œcanthus bipunctatus,* Walk. Cat. Derm. Salt. i. p. 93. 3; Sauss. Miss. Scient. Mex., Orthopt. p. 462. 7.

Acheta binota, Gmelin, in Linn. Syst. Nat. p. 2062. 84.

Œcanthus punctulatus, Fitch, Third Report on the Noxious Ins. of N. York, p. 97. 133.

Œcanthus formosus, Walk. Cat. Derm. Salt. i. p. 94. 6 (♀).

Scutellum pronoti rhomboidale, postice sulco divisum, vel subpiriforme, leviter gibberosum.

Hab. NORTH AMERICA, Maryland, Texas—MEXICO, Amula and Xucumanatlan in Guerrero 6000 to 7000 feet, Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Atoyac in Vera Cruz (*Schumann*); GUATEMALA, Lanquin, Senahu, and San Gerónimo in Vera Paz, Cerro Zunil, Pantaleon (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui, Caldera (*Champion*).

Tribus ENEOPTERINÆ.

Eneopteriens, Saussure, Mélang. Orthopt. 6ᵉ fasc. p. 642.

Eneopterites, Saussure, Miss. Scient. Mex., Orthopt. p. 464.

The insects of this tribe have not such light forms as the Œcanthinæ. Indeed, they have a more slender appearance, the elytra not being dilated as in the Œcanthinæ; moreover, the head is larger and the body stouter, the legs are shorter and more robust and normal in form, the hind femora not being prolonged in a filiform shape as in the Œcanthinæ*. The elytra of the males have a much narrower dorsal field. Their tambourine, when present, is thus very complete, but not so delicate as in the Œcanthinæ; and as the elytra are elongated, they are not obtusely rounded, but terminate in a more or less pointed apical field. The speculum is variable in form—ovate, elliptical, or rhomboidal, separated by one, rarely by two dividing veins. The post-anal and first post-axillar veins are curved in the form of a **C**; the first sends a branch

* Except in the Indian genus *Nisitrus*, which makes a sort of transition.

to the speculum. The adventitious veins belong to the two types described, *anteà*, p. 212 *. When the *venæ obliquæ* exist, they are obliquely longitudinal, straight, or flexuous, sometimes flabellate †; the last one anastomoses with the base of the diagonal vein. When the venæ obliquæ are atrophied, they are replaced by the two *venæ transversæ* (Tab. XIII. figg. 23, 29, *v*), and only the arch forming the base of the last *oblique vein* remains. This transformation is peculiar to the tribe Eneopterinæ.

In several genera of this section the elytra of the males are destitute of a tambourine, *i. e.*, formed as in the females. In a few types the tambourine is imperfectly developed, and the neuration of the elytra is, in consequence, very irregular and reticulated ‡. It may be added that some of the genera of Eneopterinæ are completely winged, and others are apterous, or have only rudimentary elytra, in both sexes. The males and females, therefore, are usually very similar in this respect, whereas in most of the Œcanthinæ the males are generally more fully winged than the females.

The genera here noticed may be grouped by the development of the elytra:—

a. Both sexes completely winged.
  b. The elytra of the males transformed, musical. Their tambourine having:
    c. The true *oblique veins* well developed. (Tab. XIII. fig. 9, *v*.)
      d. longitudinally oblique, straight, and parallel.—*Eneopterus; Diatrypus.*
      dd. elongate longitudinal, flexuous.—*Parœcanthus.*
    cc. The true oblique veins replaced by two *transverse veins*. (Tab. XIII. fig. 29, *v*.)—[*Phyllogryllus*]; *Apithes; Orocharis; Orochirus.*
  bb. The elytra of the males not musical, similar to those of the females.—*Euscirtus; Aphonus; Stenaphonus; Heterecous.*
aa. Both sexes incompletely winged.
  b. With abbreviated elytra.
    c. Males with tambourine.—[*Agnothecous*, Sss. (Oriental type).]
    cc. Males without tambourine.—*Euscirtus.*
  bb. Apterous.—[*Paranaudus; Parametrypus*, Sss. (Oriental type).]

Group **ENEOPTERITES**, Sauss.

Eneopterites, Saussure, Mélang. Orthopt. 6e fasc. pp. 645, 649.

ENEOPTERUS, Burm.

Eneoptera, Burmeister, partim (1838); Saussure, Miss. Scient. Mex., Orthopt. p. 481.
Eneopterus, Saussure, Mélang. Orthopt. 6e fasc. pp. 646, 671 (1871).
Platydactylus, Brullé, Hist. Nat. des Ins. ix. p. 176 (1855);—Serville;—de Haan;—Brunner v. W.

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* For more detailed account of their origin, see Saussure, Mélang. Orthopt. 6e fasc. figg. lv., 1, 5, 6, 7, and their explanation.

† Comp. Saussure, *loc. cit.* fig. li., *o*.

‡ Oriental genera, *Nisitrus*, *Cardiodactylus*. These types are important for the study of the homologies, showing how the normal neuration is modified to form the tambourine.

The elytra of the males with two *oblique veins*; the speculum ovate, but slightly truncate anteriorly, its *involving area* but feebly dilated externally; the apical field elongate; the lateral field with numerous costal veins, nearly straight, except the last, very oblique and close.

1. **Eneopterus surinamensis,** de Geer.

Gryllus surinamensis, de Geer, Mém. Ins. iii. p. 519. 1, t. 43. fig. 1 (♀) (1773).
Platydactylus surinamensis, Serv. Orthopt. p. 365. 1, t. 9. fig. 1 (♀);—de Haan.
Eneopterus surinamensis, Sauss. Mélang. Orthopt. 6e fasc. p. 672. 1 (♀ ♂), fig. lvii. (♂); Bolivar, Viaje al Pacifico, 1884, p. 111.
Acheta brasiliensis, Fabr. Syst. Ent. p. 280. 4 (1775); Ent. Syst. ii. p. 30. 6.
Eneoptera brasiliensis, Burm. Handb. d. Ent. ii. p. 736. 1 (♀).
Platydactylus vicinus, Serv. Orthopt. p. 365. 2 (♂);—de Haan.
Gryllus servillei, Guér.-Ménev. Icon. du Règn. Anim. t. 54. fig. 1 (1837); Gray, in Griffith's Anim. Kingd. xv. t. 113. fig. 1; Burm. Handb. d. Ent. ii. p. 737.
Platydactylus caliginosus, Walk. Cat. Derm. Salt. i. p. 79. 9 (♂) (1869).

Hab. Nicaragua, Chontales (*Janson*: ♀); Panama, Bugaba (*Champion*).—Guiana; Brazil; Peru.

A common species, spread over a great part of Tropical America, and not previously recorded from Central America.

Group **PODOSCIRTITES,** Sauss.

Podoscirtites, Saussure, Mélang. Orthopt. 6e fasc. pp. 646, 693.

I. *Genera in which the males have musical elytra, occupied by a tambourine.*

[PHYLLOGRYLLUS, Sauss.

Phyllogryllus, Saussure, Mélang. Orthopt. 6e fasc. pp. 646, 698 (1878).

The females with wide elytra: the dorsal field densely reticulated; the ulnar, anal, and axillary veins obliterated, *i. e.* fused with the medial vein, forming obsolete oblique nervures pectinated on the medial vein. The elytra of the males with an undulate stridulating vein; with two *venæ transversæ*, and an elongate apical field.

1. **Phyllogryllus mortuifolia,** Sauss.

Phyllogryllus mortuifolia, Sauss. Mélang. Orthopt. 6e fasc. p. 699. 1, fig. lxi. (♀).

♀. Elytra abdomen superantia, in dorso lata, coriacea, omnino irregulariter polygonali-reticulata, sectoribus obliquis 5–6 obsoletis; cantho humerali acutissimo, dimidia parte basali lateraliter prominulo, per venam humeralem valde incrassatam, dehinc per venam mediam, effecto. Vena discoidalis dimidia parte proximali tenuissima, dehinc lateralis, condite explicata; v. humeralis in medio cum v. media fusa ac hic desinens. V. media parte proximali tenui, parte distali crassiore, canthum acutum efficiens. Campus

lateralis polygonali-reticulatus; vena mediastina a cantho valde remota et illo parallela, ramis 10 subrectis instructa. Alæ breviter caudatæ. Lamina supra-analis magna, transverse subrhomboidalis, in medio breviter quadrato-producta. Ovipositor femori paulo longior, gracilis; valvis apicalibus elongatis, gracilibus, rugosis, apice acutis, subtus valde crenatis.

♀. Long. 21; pronot. 4, latit. 5·5; elytr. 22, latit. 6·8; fem. post. 13; ovipos. 13·5 millim.

Hab. GUIANA, Cayenne (*Mus. Genavense*).

2. **Phyllogryllus pipilans,** sp. n. (Tab. XIII. fig. 1, ♂.)

♂. Fulvo-rufescens. Caput et pronotum rufo-velutina. Antennæ graciles, concolores. Caput supra convexum, rotundatum, inter antennas obtusum; rostro nullo; facie oblique planula. Scutellum faciale transversum, breve; ejus processus frontalis quam antennarum primus articulus vix æquilatus. Oculi subovati, anterius prominuli. Vertex inter oculos vitta lata callosa albida; hac margine infero in medio pro ocello sinuata, utrinque ad illum tuberculum subtilem formante. Ocellus intermedius elliptico-transversus, ut videtur unicus (nisi ocelli laterales sint minimi ad oculos positi ?). Pronotum transversum, margine postico leviter arcuato, utrinque leviter sinuato; lobis lateralibus altis, rotundatis. Elytra elongata, in dorso parum lata, parallela; ad venas utrinque fusco-umbrata, venis partim fuscis, vel diverso modo fusco-umbratis vel maculosis. Canthus lateralis campi dorsalis acutus, per venam discoidalem fuscam effectum. Area medio-discoidalis latiuscula, parallela, per venulas divisa, in venulis maculis transversis fuscis tessellata. Campus baseos elytri (analis) venulis transversis fuscis reticulatus. Venæ obliquæ sunt: *a*, 2 *transversæ* extus leviter divergentes; *b*, insuper in angulo areæ discoidalis, venulæ minutæ 3. Speculum fere æque latum ac longum, antice in medio rectangulum, postice parabolicum; paulo ante medium per venam transversam, extus subangulatam, divisum. Area involvens intus leviter latior; vena involvens cum margine externo speculi fusa. Vena postanalis venulam brevem ad venam diagonalem, alteram ad speculi angulum, emittens. Area apicalis longissima, sectoribus 4 sigmoidalibus, ac irregulariter reticulata. Campus lateralis perpendicularis, membranaceus; vena humeralis in medio venæ mediastinæ contigua; rami venæ mediastinæ marginem inferum haud attingentes; intermedii arcuatim, ultimi fere rectangulatim, confluentes; intermediæ 2, 3 flexuosæ. Alæ longiuscule caudatæ. Pedes fulvo-pubescentes; antici et intermedii breves. Tibiæ anticæ vix dentatæ, supra subplanulæ; tympano extus elliptico, intus anguste oblongo, pubescente. Femora postica brevia, modice crassa; tibiæ quam illa paulo longiores, spinis 6 : 4, spinulis inter spinas in margine interno 1 vel 2 obsoletis, in margine externo 3 : 2 : 2 fortioribus; calcare supero-interno quam intermedium $\frac{1}{3}$ longiore. Metatarsi breves, supra spinis 1 : 2, apice calcaribus 2 longis, validis, armati. Spinæ ac spinulæ pedum minute fuscæ. Lamina supra-analis trilobata, trilobato-impressa, marginibus lateralibus ante medium sinuatis, lobis basalibus extus rotundatis; lobo apicali producto, rotundato, V-formi; marginibus omnibus leviter prominulis. Lamina infra-genitalis elongato-trigonalis.

♂. Long. corp. 15·7; pronot. 3, latit. in medio 14·5; elytr. 21·5; femor. post. 12·5 mill.

Hab. GUIANA, Cayenne (*Mus. Genavense; Prudhomme*).

This large species probably extends, like *Eneopterus surinamensis*, into the northern parts of South America and also to Panama. The male of this genus was previously unknown, and I have taken the opportunity of describing and figuring one here. The tympanum of the elytra resembles that of *Orocharis*, *Apithes*, and the allied genera (Tab. XIII. fig. 23, *v*, *v'*); but the inner nervure of the *venæ transversæ*, broken at a right angle, is prolonged somewhat beyond the second outer branch (Tab. XIII. fig. 1). The lateral field is reticulated at the base by transverse venulæ, and between them by irregular incomplete veins.—This insect cannot be the male of *P. mortuifolia*, on account of the corneous whitish callosity between the eyes.]

DIATRYPUS, Sauss.

Diatrypa, Saussure, Miss. Scient. Mex., Orthopt. pp. 465, 476 (1874).
Diatrypus, Saussure, Mélang. Orthopt. 6e fasc. pp. 647, 701.

The elytra of the males with straight *oblique veins*, obliquely longitudinal and parallel.

Synopsis specierum.

a. Corpus gracile; elytra angusta, abdomen superantia, in dorso plana; alis caudatis.
b. Marium elytra venis obliquis 3 + 2; speculo elongato, acutangulo.—1. *toltecus,* Sss.
bb. Marium elytra venis obliquis 5 + 2;
c. speculo elongato, acutangulo.—2. *jansoni,* sp. n.
cc. speculo oblique transverso, antice rectangulo.—3. *championi,* sp. n.
aa. Habitus coleopterorum. Elytra ♀ abdomine vix longiora, superne convexa, ovata; vena mediastina furcata. Alæ vix caudatæ.—4. *apithoides,* sp. n.

1. **Diatrypus toltecus,** Sauss. (Tab. XIII. fig. 5, ♀.)

Diatrypa tolteca, Sauss. Miss. Scient. Mex., Orthopt. p. 478. 1 (♂ ♀), t. 7. fig. 19 (♂).

Gracillimus, fulvo-testaceus. Caput et pronotum brunnea. Antennæ fulvæ, annulis brunneis minutis invicem valde remotis, nonnunquam ornatæ. Caput ab antico regulariter trigonale, breve. Vertex anterius oblique planatus, rostro inter scrobicula antennarum plano, quam primus articulus antennarum paulo angustiore. Palporum ultimus articulus infundibuliformi-trigonalis. Oculi tumidi, trigonali-rotundati, ad anticum prominuli. Pronotum transversum, pallide setosum, supra parum impressum, margine postico leviter arcuato vel subangulato. Lobi laterales subquadrati, angulis rotundatis, margine infero arcuato. Elytra angusta, elongata. Alæ modice caudatæ. Tibiæ anticæ leviter dilatatæ, tympano interno elongato-elliptico, majore; externo minore, oblongo. Femora postica parum crassa. Tibiæ 5:5 spinosæ, spinis brunneis. Metatarsus compressus, longiusculus, reliquis articulis 2 æquilongus vel sub-longior, supra denticulis 1:3 vel 1:4 armatus.

♀. Elytra submembranacea, in dorso venis longitudinalibus obliquis 7; venulis transversis remotis, areolas elongato-quadratas formantibus. Campi lateralis vena mediastina a vena humerali remota, 3–4-ramosa ac basi venas liberas 3 emittens. Lamina supra-analis basi rotundata, apice trigonalis. Ovipositor crassiusculus, rectus, femori postico æquilongus, apice nigro, fere globoso-tumido; valvis apice 3-dentatis.

♂. Elytra in dorso angusta; campo apicali longiusculo. Venæ obliquæ numero 3 + 2. Speculum elongato-rhomboidale, antice acutangulum, postice rotundatum, in partes 2 subæquales transversas divisum. Vena postanalis venulas 2 ad speculum emittens. Vena mediastina ramos 7–9 rectos gerens. Lamina supra-analis rotundata, sulcata. Lamina infra-genitalis parabolica, compressa.

♀. Long. corp. 8; fem. post. 5·5; ovipos. 5·5 millim.

♂. Long. corp. 9·5–10; pronot. 1·6, latit. 2; elytr. 9, latit. 3; femor. post. 6·5 millim.

Hab. Mexico, Cordova (*Saussure*: ♀ ♂), Teapa in Tabasco (*H. H. Smith*: ♀).

2. **Diatrypus jansoni,** sp. n. (Tab. XIII. fig. 4, ♂.)

♂. Minimus, gracilis, pubescens; capite et pronoto fusco-rufescentibus; elytris fusco-testaceis. Caput supra oblique deplanatum, oculis prominulis. Antennæ fulvæ, articulis 1–2 obscuris. Pronotum transversum, deplanatum, margine postico subarcuato, subbisinuato. Elytra elongata, angustissima. Campus analis elongatus, vena stridulante basi rotundato-rectangulata, haud in *zigzag* fracta. Venæ obliquæ 3 parallelæ plus 2 minores. Speculum angustum, valde longius quam latum, antice acutangulum. in medio transverse divisum. Area apicalis elongata, sectoribus obliquis 2, longitudinali 1, areolisque majoribus paucis

quadratis reticulata. Vena mediastina 6–7-ramosa. Alæ infuscatæ, longe caudatæ. Tibiæ anticæ compressæ, tympano utrinque oblongo, intus majore. Pedes postici . . . .?

♂. Long. corp. 9, cum alis 12·4; elytr. 8 millim.

Hab. NICARAGUA, Chontales (*Janson*).

This very small species does not accord very well with the other members of the genus, the vena stridulans not being broken in a zigzag at its base; but this difference is perhaps due to the minute size of the insect, the vein not having space to assume a complicated form. The single specimen received is imperfect.

3. **Diatrypus championi,** sp. n. (Tab. XIII. figg. 2, 3, ♂.)

♂. *D. tolteco* formis similis at major; fulvo-ochraceus, capite, pronoto pedibusque subtiliter rufo-punctulatis. Antennæ concolores, in nostro individuo haud annulatæ. Oculi paulo minus conici, paulo minus antrorsum prominuli quam in *tolteco*. Pronotum antice coarctatum, paulo longius, margine postico vix arcuato. Elytra corpus superantia, paulo latiora; campo anali minus longo. Venæ obliquæ 5 arcuatæ + 2–3 minutæ; omnes crassiusculæ, prominulæ. Speculum latius quam longius; vena dividente recta, ejus area antica late trigonali, antice rectangula; area postica obliqua, scilicet postice extus rotundata; margine postico quam interno duplo longiore. Area apicalis sectoribus 5: primus rectangulatim arcuatus. Campus lateralis membranaceus; vena mediastina venis 10–12 leviter sigmoidalibus, ultimis 7 parum obliquis, subtransversalibus, instructa. Tibiæ anticæ utrinque tympano oblongo majore notatæ. Tibiæ posticæ valde spinulosæ, supra fusco-punctatæ, basi fuscæ, ad spinas fusco-maculosæ; metatarsus supra 1:5 dentatus. Lamina infra-genitalis grandis, conica.

♂. Long. corp. 11·5; pronot. 2, latit. 2·6; elytr. 11·7, latit. 4·5; femor. post. 8·5 millim.

Hab. PANAMA, Bugaba (*Champion*).

4. **Diatrypus apithoides,** sp. n. (Tab. XIII. fig. 6, ♀.)

♀. Fulvo-ochraceus, valde pubescens. Caput et pronotum rufa; vertex minus deplanatus; rostro quam primus articulus antennarum valde angustiore; subsulcato. Oculi parum prominuli. Antennæ annulis fuscis minutis invicem remotis ornatæ, ultra medium densius annulatæ, apice fuscæ. Pronotum supra æque longum ac latum, subquadratum; margine postico in medio arcuato; lobis lateralibus elongato-quadratis, angulis rotundatis. Elytra abdominis longitudine, rufescentia vel obscura, supra convexiuscula, simul sumpta ovata; a supero visa cantho laterali arcuato. Campus dorsalis venis longitudinalibus 4, plus minus arcuatis, insuper apice ramis 2 venæ discoidalis, necnon vena intercalata basi incompleta. Venulæ transversæ regulares, remotæ, areolas elongato-quadratas formantes, basin versus elytri evanidæ. Campus lateralis venis longitudinalibus 5; supera furcata, infera minima. Alæ infumatæ, elytra vix superantes. Tibiæ anticæ haud dilatatæ, extus tympano oblongo, angusto, intus tympano angustissimo, sublineari. Femora postica crassiuscula; tibiæ posticæ crassiuscule denticulatæ; metatarsus longiusculus, denticulis 1:4 validis. Abdomen supra obscurescens. Lamina supra-analis basi rotundata, apice rotundato-trigonalis. Ovipositor crassiusculus, apice niger, valde dentatus.

♀. Long. corp. 7·5; pronot. 2·4, latit. 2·1; elytr. 8·5; femor. post. 7·5; ovipos. 5 millim.

Hab. PANAMA, Bugaba (*Champion*).

This species is very different from the preceding. It has somewhat the facies of a coleopterous insect on account of its convex elytra, and imitates the forms of the genus *Apithes*; but its characters are quite those of *Diatrypus*, the vertex being narrower than in *Apithes*, the elytra regularly reticulated, the hind tibiæ with 5:5 spines only, the hind metatarsi longer and slender, and the ovipositor terminated by a short obtuse dentated club, not pointed as in *Apithes*.

PARŒCANTHUS, Sauss.

Parœcanthus, Saussure, Rev. et Mag. Zool. 1859, p. 317 *; Miss. Scient. Mex., Orthopt. pp. 465, 468; Mélang. Orthopt. 6e fasc. pp. 647, 733.
Carsidava, Walker, Cat. Derm. Salt. i. p. 53 (1869).

A well-characterized genus: the females by the flattened, short ovipositor (Tab. XIII. fig. 34), the males by the interrupted zigzag stridulating vein of the elytra (Tab. XIII. fig. 9, A)†. The genus seems to be confined to Central America and the northern parts of South America. The limits of the species are somewhat uncertain, on account of the variability of the characters. The coloration is of but slight importance, except in one case (*P. niger*), all the species being fulvous in colour, with more or less numerous black marks on the elytra, these markings sometimes becoming obsolete. The antennæ, head, and pronotum vary in colour, the head and pronotum being sometimes brown or chestnut-brown. The anterior tibiæ have always an elliptic, membranaceous tympanum on their outer side (instead of on the inner side, as in *Orocharis*). The tympanum of the inner side assumes various forms according to the species, but it is somewhat variable in shape. When it is very narrow and long, it can apparently be closed by the contraction of the tibia, so as to be reduced to a ridge (this may, however, be due to contraction after death). In some cases the inner tympanum is quite obliterated and replaced by a superficial sulcus or by an elongate depression. It is difficult to say whether these differences are specific or not. The ovipositor is of a special type, as in *Heterecous* (Tab. XIII. fig. 34). The tympanum of the male elytra is very different in form from that of *Orocharis*, the true *oblique veins* being well-developed, five or six in number, elongate, longitudinal, and somewhat undulate, divided into two groups, the last two veins anastomosing with the base of the diagonal vein and the others issuing from the stridulating vein; while in *Orocharis* and *Apithes* there are only two *transverse veins*.

Synopsis specierum ‡.

a. Corpus gracillimum. Pronotum quam latum longius. Elytrorum ♂ speculum longius quam latum, rhomboidale, anterius acutangulum; vena stridulans transversa. Tibiæ anticæ tympano extus elliptico, intus lineari.—[*fallax*, Sss. (Cuba).]

aa. Corpus haud insigniter gracile. Pronotum latius quam longum. Elytrorum speculum ovatum, anterius obtusum; vena stridulans in *zigzag fracta*.

b. Species fulvo-testaceæ; elytris frequentius nigro-notatis.

c. Tibiæ anticæ in latere interno tympano membranaceo nullo.

d. Statura magna.

e. Alæ elytris æquilongæ. Tibiæ anticæ intus puncto impresso notatæ.—1. *toltecus*, Sss.

ee. Alæ caudatæ. Tibiæ anticæ intus sulco notatæ.—2. *aztecus*, Sss., var.

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* Incorrectly printed "*Paroccanthus*." † Except in *O. fallax*, Sss., which is a somewhat peculiar type.

‡ *P. lituratus* (Walk.), from Nicaragua, is so imperfectly described that its characters cannot be given.

(Comp. p. 265.)

dd. Statura minor.

e. Tibiæ anticæ latere interno depressionem elongatam obferentes. Alæ abbreviatæ.—3. *guatemalæ*, Sss.

ee. Tibiæ anticæ latere interno sulcum obferentes. Alæ elytris æquilongæ.—4. *sulcatus*, sp. n.

cc. Tibiæ anticæ in latere interno tympano membranaceo distincto instructæ:

d. elongato, angusto, lineari.

e. Tibiæ anticæ haud sensim dilatatæ, levissime fusiformes.

f. Statura maxima in genere. Alæ caudatæ.—2. *aztecus*, Sss.

ff. Statura minuta. Alæ vix caudatæ.—5. *mexicanus*, Sss.

ee. Tibiæ anticæ ante medium supra leviter tumidæ. Alæ caudatæ (*azteco* typico paulo minor).—2. *aztecus*, var.

dd. distincte aperto.

e. Tibiæ anticæ haud sensim dilatatæ:

f. tympano interno elongato, angusto. Alæ caudatæ.—6. *olmecus*, sp. n.

ff. tympano interno elliptico. Alæ vix caudatæ.—7. *tibialis*, sp. n.

ee. Tibiæ anticæ in medio valde tumidæ.—8. *podagrosus*, sp. n.

bb. Species nigra; pedibus nigris; elytris testaceis; alis abbreviatis; tibiarum tympano interno obliterato.—9. *niger*, Sss.

1 **Parœcanthus toltecus**, Sauss.

Parœcanthus toltecus, Sauss. Mélang. Orthopt. 6e fasc. p. 735. 1 (♀ ♂), fig. lxvi. (♀) (ovipositor).

P. azteco simillimus, statura æquali. Ocelli postici majores. Ultimus articulus palporum apice vix dilatatus. (Elytra haud nigro-maculosa. Caput et pronotum rufa vel castanea.) Alæ haud caudatæ. Tibiæ in latere interno foramine nullo, tantum puncto impresso notatæ.

♀. Long. corp. 20; elytr. 14; femor. post. 12·5; ovipos. 6·3 millim.

Hab. Mexico.

2. **Parœcanthus aztecus**, Sauss.

Parœcanthus aztecus, Sauss. Miss. Scient. Mex., Orthopt. p. 471. 2 (♀ ♂).

Cum *P. tolteco* species maxima generis. Fulvo-testaceus. Antennæ basi nigræ, remote minute fulvo-annulatæ, dehinc fulvæ, longiuscule fusco-annulatæ, articulis 1–2 fulvis. Ocelli in lineam arcuatam exserti; postici majores. Ultimus articulus palporum ut solitum infundibuliformis, apice angulatus. Elytra in venis plus minus nigro-notata. Alæ caudatæ. Tibiæ anticæ supra ante medium vix tumidæ; tympano interno longissimo, lineari, angusto, nonnunquam angusto. Femora postica apice breviter fusca; tibiæ posticæ ad spinas fusco-maculosæ, apice fusco.

Var. *a*. Insectum parum vel vix fusco-maculosum. Antennæ corpori concolores, remote fusco-punctatæ vel annulatæ.

Var. *b*. Minor. Elytra vix nigro-maculosa. Tibiæ anticæ infra ante medium magis tumidæ. Atæ paulo brevius caudatæ.

Var. *c*. Totus pallidus.

♀. Long. corp. 20·5; pronot. 4; elytr. 21·6; femor. post. 13; ovipos. 7 millim.

♂. Long. 20; pronot. 3·4, latit. pronot. in medio 3·2; elytr. 21, latit. 7; femor. post. 12 millim.

Hab. Mexico (*Mus. Paris.*), Atoyac in Vera Cruz (*Schumann*), Orizaba, Cordova

(*M. Trujillo*); Guatemala, Senahu and San Gerónimo in Vera Paz (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica.

3. **Parœcanthus guatemalæ,** Sauss.

Parœcanthus guatemalæ, Sauss. Miss. Scient. Mex., Orthopt. p. 475. 7 (♀ ♂).

Statura *P. mexicani*, capite supra paulo convexiore. Antennæ haud vel parum fusco-annulatæ, concolores, frequenter basi obscuræ. Pronotum paulo magis cylindricum. Caput et pronotum frequenter fusco-irrorata. Elytra haud nigro-maculosa, at vena humerali frequenter nigra. Tibiæ anticæ graciles, latere interno tympano translucido nullo, in loco ejus depressione longitudinali vel sulco instructæ. Tibiæ posticæ diverso-modo nigro-punctatæ et irroratæ.—Elytra ♀ abdominis apicem liberantia, ♂ abdominis longitudine; area apicali brevissima, transversa, rotundata. Alæ in utroque sexu elytris breviores, absconditæ.

♀. Long. corp. 15; pronot. 3·8; elytr. 9; femor. post. 9·3; ovipos. 6·5 millim.
♂. Long. corp. 14; pronot. 3; elytr. 11·5; femor. post. 9 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*); Guatemala (*Rodriguez, in Mus. Genavense*), Capetillo, San Gerónimo (*Champion*).

Similar to *P. niger*, but different in colour; also somewhat smaller and with the elytra a little shorter.

4. **Parœcanthus sulcatus,** sp. n. (Tab. XIII. figg. 12, 13.)

♂. Fulvo-testaceus. Statura intermedia inter *P. aztecum* et *P. mexicanum*. Tibiæ anticæ extus tympano elliptico, intus foramine nullo, tantum sulcum elongatum, clausum obferentes. Caput et pronotum obscure rufa. Elytra basi vitta transversa nigra; speculo antice et postice nigro-limbato vittaque arcuata inter venas anales nigra; area apicali breviuscula. Alæ vix caudatæ.

♂. Long. corp. 13·5; pronot. 3·5; elytr. 15; femor. post. (?) millim.

Figures.—Fig. 12, the male insect, from above.—Fig. 13, ditto, in profile.

Hab. Guatemala, San Gerónimo (*Champion*).

One male example. This insect closely resembles *P. guatemalæ*, and may be a variety of that species.

5. **Parœcanthus mexicanus,** Sauss.

Parœcanthus mexicanus, Sauss. Rev. et Mag. Zool. 1859, p. 317 (♀); Miss. Scient. Mex., Orthopt. p. 472. 3, t. 8. figg. 33–36 (♀ ♂); Walk. Cat. Derm. Salt. i. p. 114. 1 (1869).
Orocharis signatus, Walk. loc. cit. p. 61. 2 (♂).
Orocharis scitulus, Walk. loc. cit. p. 62. 3 (♂).

P. azteco simillimus, at minor; alis haud vel vix caudatis. Tibiæ anticæ graciles, haud tumidæ, tympano interno lineari, nonnunquam sulciformi.

Varietates colore sicut in specie laudata.

♀. Long. corp. 16; pronot. 4; elytr. 14·5; femor. post. 9·7; ovipos. 6 millim.
♂. Long. corp. 13; pronot. 2·9; elytr. 12·3; femor. post. 8·5 millim.

Hab. Mexico, Tampico (*Saussure*), Cordova and Mirador (*Saussure, Höge*), Atoyac in Vera Cruz (*Schumann*), Orizaba (*H. H. Smith and F. D. Godman*), Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

6. **Parœcanthus olmecus,** sp. n. (Tab. XIII. figg. 16, 17, ♀.)

P. mexicano paulo major et illi simillimus, fulvo-testaceus, notis nigris plus minus irroratus. Caput et pronotum castanea vel fusco-varia. Antennæ fuscæ, annulis luteis remotis. Elytra frequenter nigro-picta; ♀ campi lateralis vena mediastina ramis 7–8, necnon venis basalibus 3–4. Alæ brevissime caudatæ. Tibiæ anticæ subcompressæ, extus tympano rotundato-elliptico, intus tympano longissimo, aperto, angusto, sed haud lineari, parallelo vel leviter fusiformi, instructæ. Tibiæ posticæ supra ad spinas nigro-punctatæ. Abdomen fuscescens.

Var. Caput et pronotum rufa, vertice vittis 2 vel 4 nigris; pronoto anguste nigro-limbato.

♀. Long. corp. 14; fem. post. 10; ovipos. 6 millim.
♂. Long. corp. 14; elytr. 16; femor. post. 9 millim.

FIGURES.—Fig. 16, anterior tibia, outer side.—Fig. 17, ditto, inner side.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*: ♀), Jalapa (*M. Trujillo*: ♂).

Differs from *P. tibialis* in having the inner tympanum of the anterior tibiæ in the form of an elongated depression, this being twice the length of the elliptic opening of *P. tibialis* and distinctly membranaceous, not a narrow ridge as in *P. aztecus*. *P. foraminatus*, from Cuba, appears to be nearly allied to *P. olmecus*, differing from it in the more rounded posterior margin of the pronotum and the coriaceous elytra, with polygonal reticulation and the vena mediastina more ramose.

7. **Parœcanthus tibialis,** sp. n. (Tab. XIII. figg. 14, 15, ♀.)

Statura minore; fulvo-testaceus; elytris in dorso notis nonnullis nigris; *P. mexicano* simillimus. Antennæ fuscæ, annulis fulvis ornatæ. Alæ vix caudatæ. Tibiæ anticæ subcompressæ, in utroque latere tympano elliptico instructæ: externo rotundato, interno oblongo-elliptico.—♂. Elytrorum area apicalis brevis.

♀. Long. corp. 10·6; elytr. 13; femor. post. 9·7; ovipos. 5·8 millim.
♂. Long. corp. 12·5; elytr. 10·5; femor. post. 7·4 millim.

IGURES.—Fig. 14, anterior tibia, outer side.—Fig. 15, ditto, inner side.

Hab. PANAMA, Bugaba 1000 feet, Volcan de Chiriqui 3500 feet (*Champion*).

In this well-characterized species the inner drum of the anterior tibiæ is not linear as in *P. mexicanus*, but narrowly elliptical as in *P. foraminatus*. In general facies the insect resembles *P. mexicanus*, while *P. foraminatus* is of the type of *P. niger*, with shorter wings.

8. **Parœcanthus podagrosus,** sp. n. (Tab. XIII. figg. 7–11.)

Gracilis, quam *P. guatemalæ* minor, omnino fulvo-testaceus, unicolor, haud vel parum nigro-notatus; capite, pronoto pedibusque obscure rufis. Caput supra convexiusculum; oculi sat prominuli. Antennæ dimidia parte basali infuscatæ, annulis minimis pallidis. Palporum articulus ultimus, æque latus ac longus, trigonalis. Pronotum in medio punctis impressis 2 nitidis notatum; lobis lateralibus parum altis. Alæ caudatæ. Pedes graciles. Tibiæ anticæ tertia parte apicali graciles, in medio superne valde inflatæ, tumorem nitidum, impressione notatum, efficientes; tumore intus conchato, supra tympanum prominulo, illum leviter obtegente; tympano externo elliptico, majusculo; interno magno, longissimo, parallelo, valde aperto. Femora postica gracilia. Tibiæ posticæ frequenter superne fuscescentia. Metatarsus posticus supra 1 : 3 dentatus. Tibiarum calcaria breviuscula, supero-internum tertiam partem metatarsi æquans.

♀. Elytra angusta, longa; vena mediastina 8–9-ramosa. Ovipositor femori postico valde brevior.

♂. Minor. Elytra longiuscula, illis *P. azteci* sensim similes; area apicali tamen breviore; speculo paulo longiore quam latiore; vena mediastina 10-ramosa.

Var. Pronotum superne leviter fusco-umbratum.

♀. Long. corp. 15: elytr. 18; femor. post. 10; ovipos. 6·2 millim.

♂. Long. corp. 12·8; elytr. 12·6; femor. post. 6·8 millim.

FIGURES.—Figg. 7, 8, the female insect (ovipositor concealed).—Fig. 9, elytra of the male * (for the explanatory letters, see p. 216, nota).—Fig. 10, anterior tibia of the female, inner face.—Fig. 11, ditto, outer face.

Hab. GUATEMALA, Senahu in Vera Paz (*Champion*); PANAMA, Bugaba and La Caldera in Chiriqui (*Champion*).

A very distinct species, characterized by its anterior tibiæ having a somewhat ovate swelling in the middle, this being much more pronounced than in *P. aztecus*. The inner margin of the swelling is somewhat in the form of a shell, overlapping the border of the tympanum. The hind femora are feebly developed, and the inner spurs of the posterior tibiæ are short. In *P. aztecus* the inner spur of the hind tibiæ is half the length of the metatarsi. In size and facies *P. podagrosus* resembles *P. tibialis* and *P. niger*.

9. **Parœcanthus niger,** Sauss.

Parœcanthus niger, Sauss. Miss. Scient. Mex., Orthopt. p. 474. 6 (♀).

Statura illi *P. guatemalæ* paulo major. Niger, palpis, antennis et cercis apice spinisque tibiarum et tarsis rufo-fulvis. Pedes nigri. Elytra fulvo-grisea, ♀ abdominis longitudine. Tibiæ anticæ tympano interno anguste elongato-elliptico, piloso; vel obliterato, tantum depressionem elongatam obferens.

Long. corp. 13·5–14; pronot. 3·2; elytr. 11; femor. post. 10·5; ovipos. 6 millim.

Hab. GUATEMALA (*Rodriguez, in Mus. Genavense*).

The following species cannot be identified from the imperfect description:—

10. **Parœcanthus lituratus,** Walk.

Platydactylus lituratus, Walk. Cat. Derm. Salt., Suppl. v. p. 13 (♀).

Hab. NICARAGUA.

APITHES, Sauss.

Hapithus, Uhler, Proc. Ent. Soc. Phil. ii. p. 546 (1864).
Lebussa, Walker, Cat. Derm. Salt. i. p. 75.
Apithis, Saussure, Miss. Scient. Mex., Orthopt. pp. 466, 486.
Apithes, Saussure, Mélang. Orthopt. 6ᵉ fasc. pp. 647, 743.

The species of this genus are easy to recognize, the females having somewha the facies of Coleoptera, the elytra in this sex being rather short and convex, and, when at rest, forming a sort of box. The ovipositor is slender and straight, but in dried

* The inferior letter *z*, indicating the continuation of the first v. postaxillaris (superior *z*) to form the enclosing vein *i*, has its punctated line prolonged too far.

specimens it often becomes curved; its apex is very thin, styliform, and not dilated; the inferior valvæ are coarsely crenulated, the first tooth generally in the shape of a small rounded lobe. The elytra of the males show two *transverse veins*, and have the anal (stridulating) vein irregularly curved. (Comp. *Diatrypus apithoides*, anteà, p. 260.)

The genus extends from North America to Brazil, and is also represented in the Antilles *.

Synopsis specierum.

I.

a. Crassiusculi. Femora postica crassa. Verticis rostrum primo articulo antennarum æquilatum.

b. Pronoti lobi laterales subquadrati, scilicet margine infero horizontali, subrecto. Elytra ♀ simul sumpta supra ovata, venis longitudinalibus intricatis dense reticulata; vena mediastina 2–4-ramosa. Ultimus articulus palporum maxillarium arcuatus, apice anterius dilatatus.

c. Elytra sensim complete explicata.

d. Minor, ovipositor femori postico brevior.—1. *agitator*, Uhl.

dd. Majores, graciliores. Ovipositor femori postico haud brevior.

e. Ovipositor femori longior. Palpi apice arcuati. Tibiæ posticæ multiserratæ.

f. Alæ haud caudatæ.—2. *aztecus*, Sss.

ff. Major. Alæ leviter caudatæ.—[3. *nablista*, sp. n.]

ee. Ovipositor femori æquilongus. Ultimus articulus palporum securiformis.—[*acutus*, Sss. (Colombia).]

cc. Elytra abbreviata. Ovipositor femori brevior.—[4. *brevipennis*, sp. n.]

bb. Major. Lobi laterales pronoti antice margine infero arcuato, anterius ascendente, angulo antico rotundato. Elytra ♀ supra angustiora, polygonali-reticulata, sectoribus obliquis obsoletis, irregularibus 4–5; vena mediastina 6–7-ramosa. Alæ leviter caudatæ. Tympanum tibiarum anticarum minute ellipticum. Femora postica modice crassa. Ultimus articulus palporum maxillarium oblique trigonalis.—[*annulicornis*, Sss. (Surinam).]

aa. Gracilis, pedibus gracilibus, longioribus. Verticis rostrum angustum. Lobi laterales pronoti anterius attenuati. Elytra ♀ supra venis longitudinalibus obliquis distinctissimis; vena mediastina multiramosa. Ovipositor femori sensim æquilongus. Palpi ut in sectione *a*, *b*.—5. *montanus*, sp. n.

II.

1. *Ovipositor quam femur posticum*:

a. longior.—2. *aztecus*.—3. *nablista*.

aa. haud longior:

b. illo æquilongus.—5. *montanus*.—[*acutus*.]

bb. quam illud brevior.—1. *agitator*.—[4. *brevipennis*.]—[*annulicornis*.]

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* The species from Brazil and Colombia (*A. rolphi*, *A. acutus*, and *A. costalis*, Sauss.) are larger than those inhabiting Central America. Bolivar has described one species, *A. irroratus*, from Cuba (Ann. Soc. Ent. Fr. 1883).

2. *Ultimus articulus palporum maxillarium* :
   a. apice vix dilatatus.—4. *brevipennis*.
   aa. apicem versus dilatatus;
      b. arcuatus.—1. *agitator*.—2. *aztecus*.—[3. *nablista*.]—5. *montanus*.
      bb. securiformis.—[*annulicornis*.]—[*acutus*.]

3. *Pronoti lobi laterales* :
   a. sensim quadrati, scilicet margine infero horizontali, angulo antico parum, postico magis rotundato.—1. *agitator*.—2. *aztecus*.—[3. *nablista*.]—[4. *brevipennis*.]
   aa. margine infero obliquo;
      b. anterius attenuati, margine infero ad anteriorem ascendente, angulo antico late rotundato.—5. *montanus*.
      bb. rotundati, margine infero posterius ascendente.—[*annulicornis*.]—[*acutus*.]

1. **Apithes agitator,** Uhler.

Hapithus agitator, Uhler, Proc. Ent. Soc. Phil. ii. p. 546 (♀) (1864); Walk. Cat. Derm. Saltat. i. p. 61. 1.

Apithis agitatrix, Sauss. Miss. Scient. Mex., Orthopt. p. 490. 2 (♀).

Hapithus quadratus, Scudd. Proc. Bost. Soc. Nat. Hist. xii. p. 140 (1868); Entom. Notes, ii. p. 3. 3; Walk. Cat. Derm. Salt. i. p. 61. 2.

Apithis quadrata, Sauss. Miss. Scient. Mex., Orthopt. p. 488. 1, t. 7. figg. 16, 17 (♂ ♀).

Species minor, fulva vel rufo-fulva, pubescens. Verticis processus quam primus articulus antennarum sesquilatior. Oculi modice prominuli. Ultimus articulus palporum basi gracilis, apice arcuato-dilatatus. Antennæ fulvæ, annulis fuscis minutis remotis ornatæ. Pronoti lobi laterales elongato-quadrati, angulis rotundatis. Pedes plus minus brunneo-punctulati. Tibiæ anticæ in latere interno tympano late elliptico munitæ. Femora postica crassa; tibiæ posticæ spinis 8 : 7 armatæ. Metatarsus posticus tertio articulo tarsi sublongior, dentibus 1 : 3 armatus. Cerci modice longi, fusco-punctati.

♀. Elytra abdomine leviter breviora, ovata, convexa, cantho pallido, supra omnino venis longitudinalibus intricatis reticulata, venulis transversis partim fuscis, necnon punctis fuscis ad canthum ornatis. Vena mediastina 2 : 3-ramosa. Alæ abbreviatæ. Ovipositor rectus *, quam femur posticum paulo brevior, valvis apicalibus styliformibus, haud dilatatis, acutis, subtus valde crenatis, basi lobum rotundatum parum prominulum formantibus. Lamina supra-analis deflexa, transversa, in medio sat minute producta, apice fere rotundato-trigonalis, excavata.

♂. Elytra supra plana, abdominis longitudine, hic illic in venis fusco-punctata. Vena stridulans flexuosa. Speculum æque longum ac latum, antice rectangulum. Vena dividens extus angulata. Area apicalis minuta, polygonali-reticulata. Vena mediastina 7–8-ramosa. Alæ quam elytra breviores. Lamina infragenitalis conica, acuta.

Var. *a*. Pallidior, omnino fulvo-griseus, haud fusco-maculosus; antennis haud fusco-annulatis.—*b*. Elytrorum ♀ venæ analis et axillares 2 distinctæ longitudinales, posterius convergentes (*A. quadratus,* Sc.).—*c*. Speculum elytri ♂ antice inter venam diagonalem et ramulum analem transverse truncatum (haud angulatum).—*d*. Speculum per venas transversas 2 divisum.

♀. Long. corp. 14; pronot. 3·5; elytr. 8; femor. post. 10; ovipos. 8 millim.

♂. Long. corp. 10; pronot. 2; elytr. 7·5; femor. post. 10 millim.

Hab. North America, Southern United States.—Mexico (*Saussure*), Atoyac in Vera Cruz (*Schumann*), Teapa in Tabasco (*H. H. Smith*), Valladolid in Yucatan (*Gaumer*).—Antilles, Cuba, San Domingo.

* Originally described as having the ovipositor arcuate, but this is probably due to contraction after death.

2. **Apithes aztecus,** Sauss. (Tab. XIII. fig. 21, ♂.)

Apithis azteca, Sauss. Miss. Scient. Mex., Orthopt. p. 490. 3 (♀ ♂), t. 8. fig. 37 (♀).

A. agitatori simillimus, at statura majore, graciliore; elytris ♀ in dorso minus ovatis, magis parallelis; ultimus articulus palporum magis dilatatus.

♀. Elytra superne venis analibus longitudinalibus 3 plus minus distinctis, sectoribusque obliquis 3–4 cum reticulatione confusis. Vena mediastina 4–5-ramosa. Ovipositor quam femur paulo longior.

♂. Elytrorum vena mediastina 7–8-ramosa, ramis primis leviter sigmoidalibus; speculum antice rectangulum, per venam unam divisum.

♀. Long. corp. 15; pronot. 3; elytr. 12; femor. post. 12·5; ovipos. 15 millim.

♂. Long. corp. 13·5; pronot. 2·2; elytr. 10·8; femor. post. 10 millim.

Hab. MEXICO (*Saussure*), Cordova (*M. Trujillo*).

[3. **Apithes nablista,** sp. n.

♀. *A. azteco* conformis at major, fulvo-cinereus, pronoto et elytris fascia laterali fusca; palporum articulo ultimo arcuato-infundibuliformi, elongato-subsecuriformi; verticis rostro longiore, marginato. Ocelli orbiculares in lineam vix arcuatam dispositi; anteriore minore a posticis ab ipsa latitudine remoto. Inter ocellos et oculos utrinque tuberculus granuliformis perspicuus. Pronoti margo posterior leviter arcuatus, subsinuatus; lobi laterales paulo magis rotundati quam in *A. azteco.* Elytra abdominis longitudine, fusco-irrorata; vena media fusco-punctata; campo dorsali flexuoso-reticulato, sectoribus discoidalibus obliquis 4–5 sicut in *A. azteco.* Campus lateralis superne per lineam nigram marginatus. Alæ brevissime caudatæ. Tibiæ anticæ foramine interno oblongo. Posticæ serrulatæ, 5 : 4-spinosæ; metatarso 1 : 3-dentato. Ovipositor elongatus, robustus, valvis acutis; superioribus subtus crenatis; inferis sublobatis.

♀. Long. corp. 26; pronot. 4, latit. 5; elytr. 19; fem. post. 16; ovipos. 18 millim.

Hab. COLOMBIA (*coll. Brunner v. W.*: no. 12,346 *).]

[4. **Apithes brevipennis,** sp. n.

♀. Rufescens vel fulvescens, fulvo-pubescens, formis *A. azteco* haud dissimilis. Frontis rostrum breve. Ocelli mediocres, in trigonum latum exserti. Articulus ultimus palporum vix dilatatus. Pronoti lobi laterales margine infero horizontali, subarcuato, antice rectanguli angulo hebetato, postice angulo magis rotundato. Elytra abbreviata, segmenta 2 abdominis tegentia margine suturali sese tegentia, apice rotundata; campo laterali venis 4 simplicibus alteraque ramulosa; cantho superne vitta pallida, lateraliter fascia basali nigra. Alæ minimæ. Tibiæ anticæ in latere interno foramine elliptico mediocri. Femora postica crassiuscula; tibiæ multi-spinulosæ; spinis 8 : 7 et inter illas spinulis 2–5 armatæ; metatarsus spinulis 1 : 3. Abdomen teres. Ovipositor rectus, femori brevior, valvis apicalibus nullomodo dilatatis, acutis, subtus valde crenatis.

♀. Long. corp. 17; pronot. 3, latit. 4; elytr. 6·2; femor. post. 12; ovipos. 9·2 millim.

Hab. NORTH AMERICA, Georgia, Louisiana (*coll. Brunner v. W.*).]

5. **Apithes montanus,** sp. n. (Tab. XIII. figg. 18–20.)

♀. Staturæ *A. agitatoris* at gracilior. Fulvo-griseus, omnino fusco-punctulatus; elytris in dorso minus ovatis, magis parallelis. Rostrum verticis quam primus articulus antennarum angustius, antice attenuatum. Palporum ultimus articulus basi gracilis, apice sat fortiter dilatatus. Antennæ longiuscule fusco-annulatæ. Pronotum antice coarctatum, disco utrinque macula fusca et ad marginem posticum vitta transversa fusca. Lobi laterales fusco-maculosi, minus quadrati. minus alti, margine infero anterius ascendente, margine antico propter hoc quam posticus breviore. Elytra abdomen paulum superantia, parce reticulata, in cantho maculis 2–3 fuscis notata venisque fusco-rufis. Campus dorsalis

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* From my manuscript notes.

venis longitudinalibus 5, postice convergentibus; venulis inter illas oblique transversis, areolas oblique-quadratas formantibus; areis apicalibus inter ramos obliquos venæ mediæ per venulas irregulares sub-longitudinales haud dense reticulatis. Vena mediastina 8–9-ramosa. Alæ breviter caudatæ, griseæ. Pedes *graciles*; tibiæ anticæ lineares, intus tympanum elongatum ellipticum, extus impressionem oblongam obsolètam haud perforatam, obferentes. Femora postica pro genere gracillima, oblique fusco-lineata, ad apicem fusco-fasciata. Tibiæ posticæ fusco-fasciatæ, supra fuscæ, spinis 8 : 5 instructæ. Metatarsus spinulis 1 : 3 minoribus armatus. Ovipositor femoris longitudine, gracilis, valvis apicalibus styliformibus, subtus multicrenatis.

♀. Long. corp. 11·5; pronot. 2·5, latit. 2·5; elytr. 12, latit. 3; femor. post. 12; ovipos. 12; latit. pronot. 2·5; elytr. 3 millim.

FIGURES.—Fig. 18, the female insect.—Fig. 19, ditto, in profile.—Fig. 20, the ovipositor in profile.

Hab. PANAMA, Bugaba (*Champion*).

A very distinct species, owing to its slender legs and regularly, not densely reticulated elytra.

OROCHARIS, Uhler.

Orocharis, Uhler, Proc. Ent. Soc. Phil. ii. p. 544 (1864); Saussure, Miss. Scient. Mex., Orthopt. pp. 466, 492; Mélang. Orthopt. 6e fasc. pp. 647, 749.

This genus includes numerous species which are all very closely allied and difficult to separate, particularly in the female sex. The males present better differential characters—in the venulation of the drum of the elytra, the characteristic veins of this organ showing distinct variation in form according to the species, principally in the stridulating vein, which is either transverse (Tab. XIII. fig. 22 A) or oblique and bisinuated (Tab. XIII. fig. 23). The speculum is also more or less elongate, but less characteristic, it being rather variable in different specimens of the same species; its anterior angle receives a branch of the postanal vein, which makes it somewhat truncate, except in one known species, in which the little anal branch anastomoses with the diagonal vein instead of reaching the angle of the speculum.

The species differ a little in size. They are all of a fulvous-greyish colour. It is probable, however, that in life these insects are often of a whitish-green colour, as in the genus *Œcanthus*, but not in all specimens, greyish varieties being frequently found in living specimens, as they are, for instance, in Mantidæ. Generally, the legs are dotted with reddish-brown, but these slight differences of coloration are of no importance.

The anterior tibiæ have an elliptic tympanum on their inner side, and, generally, a smaller tympanum on their outer side. The inner drum, examined by transparency, appears as if divided by a longitudinal opaque line; the outer drum is sometimes obsolete. In this respect the genus *Orocharis* differs from *Paræcanthus*, the latter having the principal drum on the outer side of the tibia and the inner perforation often more or less closed. The mobile spines of the hind tibiæ are more or less numerous, and not very characteristic.

The species of *Orocharis* are spread over both continents of America, and seem to be very abundant, especially in Central America and the Antilles.

In the following synopsis the characters of the closely-allied Antillean and S.-American species are also given.

Synopsis specierum.

I.

a. Ocelli maximi, invicem propinqui, callosi, cum oculis per callositatem pallidam conjuncti.

b. Gracillimus, flavo-fulvus, verticis rostro angusto. Ocelli subcontigui, intermedius minor. Tibiæ anticæ utrinque tympano distincto. Alæ caudatæ.—[*saulcyi,* Sss. (Cuba).]

bb. Corpus minus gracile.

c. Vertex antice fere rectangulatim detrusus.—1. *rodriguezi,* Sss.

cc. Vertex anterius subhorizontalis; ocelli omnes grandes.

d. Statura majore. Ocelli invicem remoti, rotundati. Tibiæ anticæ utrinque tympano oblongo. Elytrorum speculum elongatum. Alæ caudatæ.—2. *gaumeri,* sp. n.

dd. Ocelli oblongi, subcontigui.

e. Minor. Tibiarum anticarum tympanum internum minimum. Elytrorum speculum æque latum ac longum. Alæ haud caudatæ.—3. *ocellaris,* sp. n.

ee. Major. Tibiarum anticarum tympana inæqualia.—[*canotus,* Sss. (Cuba).]

aa. Ocelli variabiles, vitrei, minuti vel mediocres, haud callosi.

b. Cranium globosum; vertex haud depressus, rostro lato, truncato. Ocelli minimi, palpi apice late securiformes.—4. *maxillaris,* sp. n.

bb. Vertex planatus, rostro angustiore.

c. Ovipositor valvis apicalibus lanceolatis, acutis, subtus crenatis.

d. Statura majore.

e. Ocelli minuti, invicem remoti. Speculum elytri ♂ valde acutangulum.—[*antillarum,* Sss.*; *dominguensis,* Sss. (Guadeloupe).]

ee. Ocelli magni, vitrei. Speculum elytri ♂?—[5. *amusus,* sp. n.]

dd. Minores. Speculum elytri antice rectangulum vel subacutangulum.

e. Femora postica graciliora, apice gracilia. Tibiæ anticæ utrinque tympano magno, membranaceo, instructæ. Alæ longe caudatæ.

f. Elytrorum ♂ vena stridulans transversa, arcuata; campo anali magis quadrato.—6. *tibialis,* sp. n.

ff. Elytrorum ♂ vena stridulans valde obliqua, bisinuata, campo anali elongato, angustiore.—[7. *cayennensis,* sp. n.]

ee. Femora postica crassiuscula, apice haud gracilia.

f. Ocelli majusculi, invicem propinqui, in lineam arcuatam exserti. Alæ haud caudatæ.—8. *maya,* sp. n.

ff. Ocelli minuti, granuliformes, in trigonum latum exserti. Alæ caudatæ.

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* *O. antillarum* is not well known, the palpi and anterior tibiæ being broken off in the type. In *O. dominguensis* the last joint of the maxillary palpi is triangular, and the anterior tibiæ have on each side a small tympanum.

g. Vertex antice planatus. Pronotum antice subcoarctatum.—9. *gryllodes*, Pall.—10. *saltator*, Uhl.—11. *mexicanus*, sp. n.

gg. Caput superne globosum, rostro verticis valde obliquo, latiusculo. Pronotum antice vix coarctatum.—[*helvolus*, Sss. (Guiana).]

cc. Ovipositor valvis apicalibus obtusis, *apice* crenatis.

d. Luteo-flavescens; ocellis minimis.—[12. *vaginalis*, Sss.]

dd. Griseus; ocellis mediocribus, vertice linea transversa, callosa, instructo.—[13. *terebrans*, sp. n.]

II.

1. *Caput* * :

a. supra globosum, vertice convexo; rostro verticis brevi, lato.—*maxillaris*; [*conspersus*? (Brazil)].

aa. supra posterius convexum, antice depressum vel oblique planatum, rostro verticis distincte producto.—*Reliquæ species.*

2. *Ocelli* :

a. magni, opaco-albidi, invicem propinqui.—[*saulcyi*]; *ocellaris*; *gaumeri* (?); *rodriguezi*; *maxillaris* (?); [*canotus*].

aa. minores vel minimi, vitrei, invicem remoti.

b. majusculi.—*gaumeri*; *maxillaris*; [*amusus*]; *maya*; [*fulvescens*, Sss. (S. Amer.)]; [*conspersus*, Sss. (Brazil)].

bb. minuti.—*tibialis*; *mexicanus*; *saltator*; *gryllodes*; [*terebrans*]; [*vaginalis*]; [*cayennensis*]; [*antillarum*]; [*dominguensis*]; [*helvolus*].

3. *Ultimus articulus palporum maxillarium* :

a. dilatatus,

b. latius quam longus, valde securiformis.—*maxillaris*.

bb. trigonalis, supra vix sinuatus;

c. paulo longius quam latus.—[*dominguensis*].

cc. angustus, infundibuliformis.—[*cayennensis*]; [*amusus*].

aa. apice iufundibuliformis, basi gracilis, sublinearis.—*gaumeri*; *ocellaris*; *tibialis*; [*terebrans*]; *maya*; [*saulcyi*]; *rodriguezi*; [*vaginalis*]; *gryllodes*; *saltator*; [*fulvescens*]; *mexicanus*.

4. *In marium elytris pars stridulans venæ analis* :

a. sensim transversa (campus analis propter hoc extus plus minus quadratus);

b. transversa, vix arcuata; campus analis extus quadratus, angulo truncato.—*gryllodes*; *saltator*; [*vaginalis*].

bb. arcuata, cum parte basali longitudinali venæ analis angulum obtusum efficiens.—*tibialis*.

aa. obliqua, flexuosa, cum parte basali venæ analis in arcum continua (campus analis propter hoc magis elongatus, oblique subpiriformis, postice attenuatus).—[*conspersus*].

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* *O. helvolus*, Sss., from Guiana (Miss. Scient. Mex., Orthopt. p. 495), can not be here identified, the type not being available for examination.

b. parum flexuosa, haud sinuata.—*maxillaris*.

bb. sigmoidalis, sinuata. (Venæ obliquæ minus transversæ.)—*gaumeri*; *maya*; *ocellaris*; [*antillarum*]; *mexicanus*; [*cayennensis*].

5. *Marium elytrorum speculum*:

a. sensim longitudinale;

b. quam latum vix vel paulo longius, antice subacutangulum vel acutangulum.—*gryllodes*; [*cayennensis*]; *saltator*; *tibialis*; *maya*; *ocellaris*; *mexicanus*; [*conspersus*].

bb. valde longius, antice acutangulum.—*gaumeri*; [*dominguensis*]; [*canotus*].

aa. valde obliquum; ejus apex ad canthum externum elytri productus; anterius rectangulum.—*maxillaris*.

6. *In marium elytris vena postanalis ramum*:

a. ad venam diagonalem emittens; speculi angulus anterior itaque haud truncatus.—*maxillaris*.

aa. ad angulum speculi emittens; hic angulus itaque truncatus.—*Reliquæ species*.

7. *In marium elytris venæ transversæ*:

a. tantum 2, ut solitum.—*gaumeri*; *maya*; *tibialis*; *ocellaris*; [*cayennensis*]; [*vaginalis*]; *saltator*; *gryllodes*; [*antillarum*]; *mexicanus*.

aa. insuper ante illas venis minimis 2–4;

b. venulis 4.—*maxillaris*.

bb. venulis 2.—[*conspersus*].

8. *Tibiarum anticarum tympana*:

a. in utroque latere distincta, membranacea.—*maxillaris*; *gaumeri*; *tibialis*; [*saulcyi*]; [*antillarum*]; [*vaginalis*]; [*dominguensis*]; *mexicanus*; [*cayennensis*]; [*terebrans*].

aa. externum obsoletum minime translucidum.—*maya*; *ocellaris*; *rodriguezi*; [*canotus*].

9. *Tibiæ posticæ in margine interno spinis mobilibus*:

a. numero 6–7.—*maxillaris*; [*vaginalis*]; *antillarum*; [*conspersus* (5–6)]; [*canotus* (7–8)]; [*amusus*]; [*terebrans*].

aa. numero 8–9.—*gaumeri*; *tibialis*; *ocellaris*; *maya*; *saltator*; *gryllodes*; *rodriguezi*; [*fulvescens* *]; [*dominguensis*]; [*cayennensis*]; *mexicanus*; [*canotus* (7–8)].

1 **Orocharis rodriguezi,** Sauss.

Orocharis rodriguezi, Sauss. Miss. Scient. Mex., Orthopt. p. 497. 5 (♀).

♀. Statura *O. gryllodæ*. Vertex anterius fere perpendiculariter detrusus, ad basin deflexionis in medio carinula arcuata transversa subtili notatus. Ocelli maximi, transversi, subcontigui, albidi; laterales per callositatem albidam cum oculis conjuncti. Ultimus articulus palporum infundibuliformis, rectus, oblique truncatus, sicut in *O. grylloda*. Vena mediastina elytri 8-ramosa. Alæ breviter caudatæ. Tibiæ anticæ latere interno tympano angusto oblongo, latere externo depressione elliptica vel tantum puncto vel linea translucidis instructæ. Metatarsus posticus dentibus 1 : 3 armatus.

Long. corp. 13·8; elytr. 11; femor. post. 10; ovipos. 11·2 millim.

Hab. GUATEMALA (*Mus. Genavense*).

* ERRATUM: *O. fulvescens*, Sss. (Mélang. Orthopt. 6e fasc. p. 752). In the Latin diagnosis, 4th line, *read*:—"tibiis 9 : 6-spinosis."

2. **Orocharis gaumeri,** sp. n. (Tab. XIII. fig. 26, ♂.)

♂. Statura media *O. tibialis,* at gracilior. Vertex oblique planatus; rostro angusto, quam primus articulus antennarum dimidio angustiore. Ocelli magni, elliptici, planuli, pallidi, in lineam arcuatam exserti; intermedius quam laterales minor. Oculi prominuli, margine postico subsinuato. Ultimus articulus palporum elongato-infundibuliformis. Pronotum antice vix coarctatum, utrinque vitta nigra; hæc in elytris inter venam mediastinam et venam humeralem longe producta. Elytra angusta; vena stridulans obliqua, flexuosa; *venæ transversæ* parum transversales, postica arcuata; speculum longius quam latum, antice acutangulum, leviter truncatum. Area apicalis longiuscula, sat regulariter reticulata. Vena mediastina 14-ramosa. Alæ haud vel vix caudatæ. Tibiæ anticæ utrinque tympano elliptico instructæ; interno majusculo, externo minore, angusto. Femora postica sat gracilia. Tibiæ posticæ supra fuscæ, spinis 8:7 pallidis armatæ, annulo medio et apice fuscis.

♂. Long. corp. 19; pronot. 3·2; elytr. 17; femor. post. 13·5 millim.

Hab. MEXICO, Valladolid in Yucatan (*Gaumer*).

3. **Orocharis ocellaris,** sp. n.

♂. *O. saltatori* paulo minor. Caput superne anterius oblique planatum. Ocelli maximi, lutei, subcontigui, sicut in *O. rodriguezi.* Ultimus articulus palporum apice supra valde dilatatum, propter hoc arcuatum. Elytrorum vena stridulans valde obliqua, flexuosa; speculum quam in *O. grylloda* antice obtusius, rectangulum, angulo antico paulo magis truncato; *venæ transversæ* minus transversales, magis longitudinales, cum vena media angulum valde acutum formantes. Vena mediastina 11–12-ramosa. Alæ breviter caudatæ. Tibiæ anticæ intus tympano magno elliptico, extus depressione elongata ac foramine elliptico, translucido, minuto, instructæ. Metatarsus posticus dentibus 1:2.

♂. Long. corp. 11; pronot. 2·5; elytr. 10·8; femor. post. 10 millim.

Hab. GUATEMALA, Capetillo (*Champion*).

If it were not for the very peculiar form of the head of *O. rodriguezi*, I should have taken this insect to be its male.

4. **Orocharis maxillaris,** sp. n. (Tab. XIII. fig. 27.)

♂. Statura valida; fulvo-testaceus, rufo- vel fusco-punctulatus. Antennæ nigro-annulatæ. Caput supra convexum. Vertex antice haud deplanatus; rostro brevi, haud impresso, trapezino, apice primo articulo antennarum æque lato. Ocelli magni; postici laterales, minores; intermedius maximus, transversus, obsoletus. Scutelli facialis processus inter antennas latiusculus. Ultimus articulus palporum maxillarium maxime dilatatus, securiformis, latius quam longus. Pronotum (♂) anterius coarctatum, margine postico sensim arcuato. Pronoti lobi laterales anterius et posterius late rotundati; margine infero pone medium subsinuato, retro leviter ascendente. Elytra sat lata, elongata. Pars stridulans venæ analis obliqua, flexuosa, cum parte basali in arcum continua; *venæ transversæ* valde transversales; antica arcuata. *Venæ obliquæ* supplementares minutæ 4, arcuatæ; vena diagonalis brevis. Speculum oblique transversum, antice rectangulum; ejus apex posterior valde arcuatus, ad marginem externum rejectus; ejus vena dividens parum arcuata, haud angulata. Vena postanalis maxime arcuata; venula ab illa emissa haud ad angulum speculi desinens, sed in vena diagonali exserta; angulus anterior speculi itaque haud truncatus. Area discoidalis et speculum densissime in longitudinem irregulariter pliculata, subreticulosa. Area apicalis grandis, fusco-punctata, dense irregulariter reticulata. Vena mediastina ramos 12–13 valde sigmoidales emittens. Alæ brevissime caudatæ. Pedes brunneo-punctatæ. Tibiæ anticæ intus tympano elliptico oblongo, extus depressione elongata cum linea translucida instructæ. Femora postica subgracilia. Tibiæ posticæ spinis utrinque 6; metatarso dentibus 3:1. Abdomen subtus fuscescens; cerci fulvi, fusco-punctati.

♂. Long. corp. 16; pronot. 3·3; elytr. 18 millim.

FIGURE.—Fig. 27, the terminal joints of the maxillary palpus, ♂.

Hab. Panama, Volcan de Chiriqui 2500 feet (*Champion*).

This species resembles *O. conspersus*, Sss., from Brazil, but it is smaller and has the apical part of the vertex truncate and convex, not sulcate; the neuration of the male elytra is also different, the postanal vein being strongly arcuate and its branch not falling on the inner end of the speculum, but joining the *vena diagonalis* before this angle; and the speculum is very elongate and ovate. The neuration of the tympanum ("vena stridulans et v. obliquæ supplementares") resembles that of *O. conspersus*, and these two species form, on this account, a particular group.

[5. **Orocharis amusus,** sp. n. (Tab. XIII. fig. 28.)

♀. Maximus, fulvo-testaceus. Verticis rostrum primo articulo antennarum æquilatum, orbiculo minuto glabro, plano, ocellum imitante notatum. Ocelli grandes, in lineam transversalem exserti, vitrei, haud callosi; laterales orbiculares; intermedius minor, transversus. Palpi maxillares articulo ultimo dilatato, compresso, triangulari, basi haud gracili. Pronotum postice obtusangulatum. Elytra elongata, vena humerali extus fusco-limbata; vena mediastina 5-ramosa. Alæ longe caudatæ. Tibiæ posticæ spinis 6 : 5. Ovipositor modice acutus, valvis apicalibus subtus irregulariter lobato-crenatis.

♀. Long. corp. 1·5; elytr. 22·5; femor. post. 15·5; ovipos. 15–16 millim.

Figure.—Fig. 28, the terminal joints of the maxillary palpus, ♀.

Hab. Brazil, Pernambuco (*Mus. Genavense*).

A species of the size of *O. canotus*, remarkable by the form of its maxillary palpi.]

6. **Orocharis tibialis,** sp. n. (Tab. XIII. fig. 25.)

O. gryllodæ simillimus at paulo major; gracilis, fulvo-testaceus; elytris sparse in canthis brunneo-punctatis. Caput vertice planato vel subexcavato; ocellis majusculis; antico in medio rostro exserto, angusto, transverso. Palporum ultimus articulus (fig. 25) gracilis, apice infundibuliformis. Elytra elongata, abdomen superantia. Alæ longiuscule caudatæ. Pedes antici subtiliter brunneo-irrorati. Tibiæ anticæ ad basin leviter dilatatæ, utrinque tympano magno, elliptico, membranaceo, in medio linea subopaca notato. Femora postica gracilia, longiuscula, quarta parte apicali gracili. Tibiæ posticæ ad spinas fusco-punctatæ. Cerci fusco-punctati.

♀. Elytri vena mediastina 8–9-ramosa. Ovipositor femoris longitudine, apice acutissimus. Lamina supra-analis basi transversa, in medio parallele producta.

Var. Ovipositor femori postico paulo longior.

♂. Elytri vena mediastina ramis 13–14 sigmoidalibus instructa. Tympanum normale, illo *P. gryllodæ* (Tab. XIII. fig. 22) conforme; speculo æque longo ac lato, postice paulo obtusiore. Vena stridulans arcuata. *Venæ transversæ* (*v*) transversales. Area apicalis elongata, dense in longitudinem pliculata. Lamina infra-genitalis apice sulcata.

♀. Long. corp. 14·5; elytr. 19; femor. post. 11·8; ovipos. 11 millim.

♀. Long. corp. 16; elytr. 18; femor. post. 12; ovipos. 13 millim.

♂. Long. corp. 14·8; elytr. 19·5; femor. post. 11·4 millim.

Figure.—Fig. 25, the terminal joints of the maxillary palpus, ♂.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*); Panama, Bugaba (*Champion*).

Belongs to the group of *O. antillarum* and *O. dominguensis*, its hind femora being attenuated at the end; but it is of smaller size than these species, and the speculum

of the male elytra is anteriorly rectangular, while in the Antillean insects it is elongate and anteriorly acute-angular. The drums of the anterior tibiæ are large, while in *O. dominguensis* they are small (in *O. antillarum* not known).

[7. **Orocharis cayennensis,** sp. n. (Tab. XIII. figg. 23, 24.)

♂. Statura *O. tibialis* et illi simillimus; paulo gracilior. Ocelli minuti. Verticis rostrum sat angustum. Ultimus articulus palporum plane infundibuliformis (elongato-trigonalis), basi haud gracillimus, supra haud sensim sinuatus. Elytra ♂ angusta, illis *O. gaumeri* et *O. ocellaris* conformia; vena stridulante valde obliqua ac undata, venisque *transversis* (*v*, *v'*) valde retro-oblique longitudinalibus. Area apicali longiuscula. Alæ longiuscule caudatæ. Tibiæ anticæ utrinque tympano elliptico instructæ. Femora postica gracilia. Tibiæ posticæ spinis 6 : 8 armatæ.

♂. Long. corp. 17; pronot. 2·5; elytr. 17; femor. post. 11·5 millim.

FIGURES.—Fig. 23, base of the male elytra; *v*, *v'*, venæ transversæ.—(Comp. *O. gryllodes*, Tab. XIII. fig. 22.)
—Fig. 24, the terminal joints of the maxillary palpus, ♂.

Hab. GUIANA, Cayenne (*Prudhomme*).

Differs from *O. tibialis* in the regularly funnel-shaped apical joint of the maxillary palpi. The *vena stridulans* and the *venæ transversæ* of the male elytra are much more longitudinal, not transverse as in *O. tibialis*, in which insect, moreover, the vena stridulans is not undulated nor sinuated.]

8. **Orocharis maya,** sp. n.

♂. Statura minore *O. vaginalis*, fulvescens. Vertex leviter planatus. Ocelli mediocres, sat propinqui; intermedius major, transversus; laterales minores, cum canthis obliquis juxtaocularibus plus minus confusi, indistincti. Palporum articulus ultimus parum arcuatus, elongato-infundibuliformis. Pronotum utrinque vitta nigra. Elytra punctis paucis nigris. Vena mediastina ramos 8–9 emittens. Vena stridulans parum obliqua, flexuosa, cum parte basali venæ analis angulum obtusum efficiens. *Venæ transversæ* transversales. Speculum fere æque latum ac longum, antice subobtusangulum. Area apicalis breviuscula. Alæ elytrorum longitudine, haud caudatæ. Tibiæ anticæ latere interno tympanum ellipticum grande, per lineam opacam divisum, latere externo depressionem oblongam haud membranaceam, obferentes. Femora postica crassiuscula. Tibiæ posticæ supra basi macula elongata nigra spinarumque basi fusco-circumdata.

♂. Long. corp. 13; pronot. 2·5; elytr. 12; femor. post. 9·2 millim.

Hab. MEXICO, Temax in N. Yucatan (*Gaumer*).

Very near *O. ocellaris*, but with the ocelli concolorous with the head and not so large. The posterior ocelli are small. The apical area of the elytra is longer than in *O. ocellaris*, elongate-triangular.

9. **Orocharis gryllodes,** Pallas. (Tab. XIII. fig. 22.)

Gryllus gryllodes, Pallas, Spicil. Zool. p. 16, t. 3. fig. 10 (♂) (1772); Oliv. Encycl. Méth., Ins. vi. p. 637. 15 (1791).

Eneoptera gryllodes, de Haan, Bijdrag. etc. p. 232. 6.

Orocharis gryllodes, Sauss. Mélang. Orthopt. 6e fasc. p. 755. 5.

? *Gryllus unicolor*, Oliv. Encycl. Méth., Ins. vi. p. 635. 7.

Statura minore, fulvo-testaceus; capite et pronoto fusco-variis; elytris in cantho, ♂ in tympano, remote, fusco-

punctatis. Ocelli minimi. Vena mediastina elytrorum ramis parum numerosis instructa. Alæ breviter caudatæ.

Var. Omnino fulvo-testaceus, vel tantum pronoto utrinque vitta nigra.

♀. Ovipositor corpore æquilongus.

♂. Elytri vena stridulans complete transversa, recta; *venæ transversæ* transversales.

♀. Long. corp. 13; elytr. 14; femor. post. 10·5; ovipos. 11 millim.

♂. Long. corp. 13; elytr. 14; femor. post. 9 millim.

FIGURES:—Fig. 22. Basal part of the male elytron (for the explanation, see p. 216, nota): *A*, the *vena stridulans*; *v*, the venæ *transversæ* (here transverse, not obliquely longitudinal as in *O. cayennensis*, fig. 23; these veins joined by an arch to the diagonal vein *b*).

Hab. NORTH AMERICA, Dallas in Texas (*Boll*).—N. MEXICO, Tamaulipas.—CUBA (*Saussure*).

10. **Orocharis saltator,** Uhler.

Orocharis saltator, Uhler, Proc. Ent. Soc. Phil. ii. p. 585 (1864).

Orocharis saltatrix, Sauss. Miss. Scient. Mex., Orthopt. p. 494. 1.

O. gryllodæ simillimus, frequentius totus fulvo-testaceus; alis brevius caudatis; ovipositore corpori breviore.

♀. Long. corp. 13·5; elytr. 14·5; femor. post. 10; ovipos. 11 millim.

♂. Long. corp. 14; elytr. 14; femor. post. 9 millim.

Hab. NORTH AMERICA, Baltimore.

Var. *meridionalis.* Minor; ultimus articulus palporum apice dilatatus, itaque supra arcuatus. Marium elytra venis transversis haud transversalibus, magis obliquis, arcuatis, postice intus valde acutangulis.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Mirandilla (*Champion*: ♀ ♂).

May be a mere variety of *O. gryllodes.*

11. **Orocharis mexicanus,** sp. n.

Statura minuta *O. ocellaris* et illi simillimus. Differt ab illo: ocellis minutis, invicem remotis, nullomodo callosis; palporum articulo ultimo apice minus dilatato, infundibuliformi, supra minus sinuato. Marium elytra illis speciei laudatæ simillima; vena stridulante sinuata, valde biundata; *venis transversis* valde obliquis; differt tamen speculo antice paulo acutiore, subacutangulo; area apicali longiore. Alæ breviter caudatæ. Tibiæ anticæ utrinque tympano elliptico instructæ; externo angustiore.

♀. Long. corp. 12; elytr. 13; femor. post. 11; ovipos. 11 millim.

♂. Long. corp. 11·5; elytr. 13; femor. post. 9·5 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Pantaleon and Mirandilla (*Champion*).

The female of this small species closely resembles *O. gryllodes*; but it is still smaller, and its ocelli form an arcuated line, the anterior ocellus being placed a little less forwards than in *O. gryllodes.* The male is very different from that of *O. gryllodes,* the venulation of the elytra belonging to the type of *O. ocellaris, O. gaumeri,* &c.

[12. **Orocharis vaginalis,** Sauss.

Orocharis vaginalis, Sauss. Mélang. Orthopt. 6ᵉ fasc. p. 755. 6.

Minutus, *O. mexicani* staturæ. Pallidus, luteo-virescens vel luteus. Ocelli minimi, in trigonum exserti, postici per carinulam rectam conjuncti. Palporum ultimus articulus apice infundibuliformis. Pronotum

breve, transversum, antice attenuatum. Elytra thalassina. Alæ caudatæ. Tibiæ anticæ intus tympano piriformi, extus oblongo, parum translucido instructæ. Femora postica subgracilia. Tibiæ posticæ spinis in margine interno 6–8 armatæ.

♀. Ovipositor valvis apicalibus nigris, obtusis, apice lobatis. Elytra densiuscule reticulata. Vena mediastina ramos 8–9 emittens.

♂. Elytra superne sicut in *O. grylloda* venosa; vena stridulante et *venis transversis* transversalibus.

♀. Long. corp. 13; elytr. 14·2; femor. post. 10·5; ovipos. 9·2 millim.

♂. Long. corp. 10; elytr. 13·5; femor. post. 9 millim.

Hab. ANTILLES, Porto Rico (*Mus. Genavense*).]

[13. **Orocharis terebrans,** sp. n.

Orocharis vaginalis, Sauss., *var.,* Mélang. Orthopt. 6e fasc. p. 757.

♀. *O. vaginali* simillimus, ejusdem staturæ vel paulo major; fulvo-griseus. Ocelli mediocres, majores. Vertex inter oculos vitta luteo-callosa transversa, ocellos posticos implectente instructus. Elytra cantho humerali pallido. Alæ longiuscule caudatæ. Tibiæ anticæ in utroque latere tympano elliptico magno instructæ. Femora postica saltem apice graciliora.

♀. Long. corp. 11·5; elytr. 16; femor. post. 10·5; ovipos. 9·5 millim.

Hab. ANTILLES, Porto Rico (*Mus. Genavense*).]

OROCHIRUS, Bolivar.

Orochirus, Bolivar, Mém. Soc. Zool. Fr. i. p. 162 (1888).

Insecta gracilia, depressa, corrugata, valde pubescentia. Caput superne parum convexum, postice haud tumidum, rostro longiusculo. Ocelli in trigonum exserti. Foveolæ antennales magnæ; eorum margines extus ad oculos dentem efficientes. Facies obliqua; vertex itaque acutus. Scutellum faciale transversum, *lævigatum*; ejus processus frontalis trigonalis. Antennarum primus articulus deplanatus, apice angulo interno pilis spinuliformibus armato. Pronotum plus minus corrugatum, margine postico transverso, subsinuato; canthis lateralibus acutis; marginibus nigro-punctatis; ejus lobi laterales parum alti (Tab. XIII. fig. 30), leviter retro-producti, rotundati. Elytra elongata. Pedes valde pubescentes; antici 4 breves. Femora maxime compressa, lobi geniculares intermediorum rotundati, anticarum variabiles, posticarum producti. Tibiæ anticæ et posticæ subprismaticæ, latere supero plano, subsulcato; intermediæ valde compressæ, fusiformes, margine supero carinato. Anticæ in latere interno tympano majusculo elliptico, latere externo foramine minore vel obsoleto instructæ. Femora postica gracillima, basi haud clavato-tumida, apice haud graciliter coarctata; lobis genicularibus apice plus minus productis. Metatarsi postici supra dentibus 1 : 2 armati.

♀ ♀. Ovipositor gracilis, elongatus, valvis apicalibus lanceolatis, acutis, subtus crenatis (sicut in gen. *Apitha*).

♂ ♂. Elytra deplanata. Campus dorsalis in longitudinem plicato-striatus (Tab. XIII. fig. 29). Vena stridulans complete transversa; campus analis propterea extus quadratus. Venæ discoidalis et media basi invicem valde remotæ. Area apicalis elongata. Tympanum *venis transversis* 2 notatum; speculo elongato, antice acutangulo; vena postanalis ramum ad ejus angulum emittens. Venæ humeralis et mediastina contiguæ, hæc ramos numerosos, parum arcuatos, emittens.

The genus *Orochirus* is closely allied to *Apithes* and *Orocharis*, the tambourine of the male elytra belonging to the same type and the anterior tibiæ having a large tympanum on their inner side. It differs from these genera, however, in the following characters:—the surface of the head, pronotum, and legs is somewhat wrinkled and strongly pubescent (not even and shiny, as in *Apithes* and *Orocharis*). The apex of the vertex is more elongate. The ocelli are placed in a triangle, not in a transverse

arcuated line. The femora and the intermediate tibiæ are so much compressed as to be nearly lamellar; the posterior femora are not clubbed at the base. The genicular lobes of the anterior and posterior tibiæ are sometimes produced. The elytra are elongated: in the females rough and irregularly reticulated; in the males produced into a long apical field, and with a rhomboidal speculum, which is narrower and more elongate than in *Apithes* and *Orocharis*. The males are sometimes depressed.

These insects are generally of a grey colour, with black dots and stains. The genus seems to be peculiar to Central America and the Antilles.

Synopsis specierum.

a. Ultimus articulus palporum maxillarium trigonalis.

b. Gracillimus, fulvescens. Tympanum externum tibiarum anticarum minutum, lineare vel obliteratum. Elytra marium vena stridulante obliqua, sinuata; speculum angustissimum, antice acutangulum, haud truncatum, ramum venæ postanalis in angulum ipsum excipiens.—[1. *krugi*, Sss.]

bb. Depressiusculi. Tympanum externum tibiarum anticarum oblongum. Elytra marium vena stridulante transversa, arcuata; speculum ramum venæ postanalis juxta ejus angulum excipiens, itaque angulo minute truncato.

c. Major; cinereus. Femoribus posticis vitta albida transversa. Ultimus articulus palporum trigonalis.—2. *corrugatus*, sp. n.

cc. Minutus; testaceus. Ultimus articulus palporum anguste trigonalis.—3. *musicus*, sp. n.

aa. Ultimus articulus palporum subquadratus. Insectum griseo-cinereum. Ovipositoris valvæ apicales subtus basi lobo unico.—[*pilosus*, Boliv. (Cuba).]

[1. **Orochirus krugi**, Sauss.

Orocharis krugii, Sauss. Mélang. Orthopt. 6e fasc. p. 747. 4 (♂), fig. lxiv.

Orochirus krugii, Bolivar, Mém. Soc. Zool. Fr. i. p. 162.

Gracillimus, depressiusculus, cinereo-fulvescens, rugulosus, ubique brunneo-punctatus. Caput parum convexum, inter oculos excavatum; verticis rostro elongato, subtrigonali, horizontali late sulcato. Ocelli obsoleti, in trigonum elongatum ordinati; postici mediocres, utrinque in basi rostri exserti; anterior ad apicem rostri conspicuus, obsoletus, impressus. Foveolæ antennales supra angulatæ. Cranium brunneo-7-vittatum, vittis incompletis, per plagias lævigatas formatis, et juxta oculos utrinque plagiam orbicularem planulam ocelliformem præbens. Oculi globosi. Scutellum faciale altum, fuscum, fulvo-varium, superius trigonali-productum, apice leviter truncatum. Palpi flavi; 5° articulo tertio æquilongo, infundibuliformi-trigonali. Antennæ fulvescentes, fusco-annulatæ; primo articulo subtus flavo, fusco-bilineato. Pronotum breve; superficie impressionibus obsoletis; margine postico transverso, leviter arcuato ac bisinuato, fusco-punctato; canthis lateralibus acutis, subundatis; lobi laterales oblique deflexi, antice et postice æqualiter alti; angulis æqualiter rotundatis, margine infero arcuato. Pedes valde compressi, ubique valde pubescentes, longe fimbriati. Femora minus dilatata quam in *O. corrugato*, supra carinata, subtus bicarinata, fusco-punctata; anteriora lobo geniculari interno rotundato, externo spiniformi; postica lobis geniculatibus binis spiniformibus, sed haud acutis. Tibiæ anticæ tympanis membranaceis; interno magno, elliptico, externo minuto, vel lineari, vel obliterato. Pedes posteriores longi. Femora angusta, marginibus supero et infero subrectis. Tibiæ femorum longitudine, haud compressæ; latere supero subsulcato, marginibus spinulis numerosis gracilibus obsitis ac 7 : 7-spinosis. Metatarsus rotundatus, 1 : 2-dentatus.

♂. Elytra elongata, valde angusta; speculo valde elongato, anterius acutangulo, angulo haud truncato. Area apicalis longiuscula. Vena postanalis leviter flexuosa, subrecta, ramum ad ipsum angulum speculi

emittens; hic itaque haud truncatum; venæ postaxillares subrectæ, leviter flexuosæ. In campo laterali rami venæ mediastinæ 12 : 13, subrecti. Alæ longe caudatæ. Lamina infra-genitalis conica.

♂. Long. corp. 23; pronot. 2·5, latit. 3·5; elytr. 18; fem. post. 13·3 millim.

Hab. ANTILLES, Haiti (*coll. Brunner v. W.*: no. 11,754), Porto Rico (*Mus. Genavense*), Cuba (*Dr. Krug*).

This species is the type of the genus.]

2. **Orochirus corrugatus,** sp. n. (Tab. XIII. figg. 29, 30, ♂.)

Griseus, brunneo- et fusco-punctatus. Verticis rostrum apice vix attenuatum, truncatum; supra obsolete impressum. Ocelli minuti, in trigonum regularem exserti, postici laterales, oblongi, in marginibus baseos rostri exserti; anticus minor, in impressione apicis rostri perspicuus. Ultimus articulus palporum infundibuliformis, angulo supero-apicali leviter producto. Antennæ fusco- et fulvo-annulatæ, primo articulo fusco-maculoso. Pronotum transversum, corrugatum; disco impressionibus nonnullis. Canthi laterales acuti, vel dimidia parte postica obsoleti. Margo posterior subarcuatus, utrinque leviter sinuatus. Lobi laterales margine infero ♂ parum, ♀ magis arcuato. Facies supera fusco-varia, marginibus fusco-maculatis. Alæ modice caudatæ. Pedes fusco-punctati et irrorati. Femora 1, 2 latiuscula, maxime compressa, lobis genicularibus rotundatis. Tibiæ anticæ latere interno tympano magno, elliptico instructæ, infra illum sulcatæ; latere externo tympano minore, oblongo præditæ. Femora postica gracilia, extus prope basin vitta transversa, et ante apicem superne macula, albidis ornata. Tibiæ fusco-punctatæ et irroratæ, spinis mobilibus fuscis plurimis, apice vel totice luteis; facie supera ante apicem macula albida spinaque utrinque una propter hoc lutea. Metatarsus supra utrinque dente unico apicali armatus.

♀. Elytra elongata, angusta, grisea, in venis nigro-punctata et lineata; campo dorsali in longitudinem valde irregulariter intricato-reticulato. Campus membranaceus intercalatus longissimus, late quadrato-reticulatus; campus lateralis sat irregulariter reticulatus; vena mediastina ramis 6 leviter flexuosis. Alæ apice sat rotundatæ, margine costali griseo. Lamina supra-analis rotundato-trigonalis. Ovipositor elongatus, supra linea fusca; valvis apicalibus castaneis, gracilibus, longiusculis, acutis, subtus leviter crenulatis, in medio dentem obtuse-trigonalem gerentibus.

♂. Margines laterales processuus scutelli faciali nigri, fere tuberculum elongatum nigrum præbentes*. Pronoti lobi laterales postice quam antice altiores, margine infero leviter obliquo. Elytra grisea, brunneo-punctata, in venis fusco- et luteo-punctata. Venæ discoidalis et media basi flexuosæ, inter se pagum fusiformem majusculum includentes. *Venæ transversæ* valde transversales, secunda extus ad primam sensim convergens; ramus internus venarum illarum flexuosus, sinuatus. Speculum quam in *O. krugii* latius, quam latum vix sesquilongius, angulo antico truncato; vena dividente transversa, obtusangula. Vena postanalis et vena postaxillaris prima arcuatæ, parallelæ. Area apicalis longissima. Campus lateralis abdomen valde amplectens. Venæ humeralis et mediastina nigræ. Vena mediastina 12–14-ramosa, ramis modice arcuatis. Abdomen fusco-testaceum. Lamina supra-analis paulo latior quam longior, trigonalis, utrinque sinuata, apice propter hoc angusta. Lamina infra-genitalis elongata, conica, leviter truncata. Cerci brunneo-annulati.

♀. Long. corp. circ. 18; pronot. 3, latit. pron. 4; elytr. 21; femor. post. 13; ovipos. circ. 10 millim.

♂. Long. corp. 19·5; pronot. 2·4, latit. pron. 4·3; elytr. 21, latit. supra 6·3; femor. post. 13 millim.

Hab. MEXICO, Cordova (*Saussure*); PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*: ♀ ♂).

3. **Orochirus musicus,** sp. n.

♂. Minutus, fulvo-testaceus, pronoto et pedibus brunneo-punctatis; *O. corrugato* formis simillimus. Caput supra obsolete in longitudinem brunneo 6-vittatum. Verticis rostrum apice truncatum, ultra medium impressum. Ocelli minuti, in trigonum exserti; postici superne in basi rostri perspicui, in impressionibus

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* Anne in feminis incertum videtur.

obsoletis locati, a marginibus rostri leviter remoti; anterior in foveola rostri ante apicem exsertus. Scutellum faciale superne obtusangulum, per carinulam compressam cum vertice conjunctum. Ultimus articulus palporum infundibuliformis. Antennæ luteæ, remote minute fusco-annulatæ, primo articulo subtus utrinque vitta fusca. Pronoti margines superi fusco-punctati; canthi acuti, subsinuati, fusci. Lobi laterales margine infero subrecto, horizontali. Elytra femora superantia, pallida, illis speciei laudatæ similiter venosa; *venæ transversæ* tamen regulares, cum ramo interno angulatæ; hoc, recto, venæ diagonali subparallelo. Speculum angustum, quam latum plusquam sesquilongius, antice leviter truncatum; vena dividente subtili, incompleta, margine anteriore proxima. Area discoidalis et speculi plicæ longitudinales minus numerosæ quam in *O. corrugato*. Venæ humeralis et mediastina nigræ; hæc 3–9-ramosa, ramis primis arcuatis. Pedes illis speciei laudatæ similes. Femora 1, 2 latiuscula. Lobi geniculares rotundati; illi femorum posteriorum in processum brevem producti. Tibiæ anticæ intus tympano elliptico, majore, extus minore, obsoleto. Tibiæ posticæ spinis 8 : 6. Metatarsus supra dentibus minutis 1 : 2 armatus.

Long. corp. 11·7; pronot. 1·8, latit. 2·6; elytr. 13·3, latit. supra 3·8; femor. post. 10 millim.

Hab. PANAMA, Bugaba (*Champion*).

A very distinct species, characterized by its small size and pale colour.

ECTOTRYPUS, Sauss.

Ectotrypa, Saussure, Miss. Scient. Mex., Orthopt. p. 466 (1870).
Ectotrypus, Saussure, Mélang. Orthopt. 6e fasc. pp. 647, 757.

Form slender, elongate; the head nearly horizontal. Males unknown.

1. **Ectotrypus olmecus**, Sauss.

Ectotrypa olmeca, Sauss. Miss. Scient. Mex., Orthopt. p. 467. 1 (♀).
Ectotrypus olmecus, Sauss. Mélang. Orthopt. 6e fasc. p. 757, fig. lx. (♀).

♀. Gracilis, fulvo-flavus; vertice anterius pronotoque brunneis.

Hab. MEXICO (*Saussure*).

II. *Genera in which the males are similar to the females, their elytra not being transformed into a musical instrument.*

EUSCIRTUS, Guérin.

Euscyrtus, Guérin-Méneville, Icon. du Règne Anim., Ins. p. 334 (1829–1838).
Euscirtus, Saussure, Miss. Scient. Mex., Orthopt. pp. 466, 500; Mélang. Orthopt. 6e fasc. pp. 648, 762.

1. **Euscirtus mexicanus**, Sauss.

Euscirtus mexicanus, Sauss. Miss. Scient. Mex., Orthopt. p. 501. 1 (♀), t. 7. fig. 14; Mélang. Orthopt. 6e fasc. p. 768 (♀).

Hab. MEXICO, Orizaba (*Saussure*).

APHONUS, Sauss.

Aphonus, Saussure, Miss. Scient. Mex., Orthopt. pp. 466, 509; Mélang. Orthopt. 6e fasc. pp. 648, 796.

The American species of this genus have the last joint of the maxillary palpi dilated,

sometimes broad and triangular; in other cases infundibuliform, but anteriorly dilated at the tip.

Synopsis specierum.

a. Tibiarum anticarum foramen ellipticum vel oblongum.
b. Palporum articulus ultimus securiformis. Oculi valde prominuli.
c. Ocelli mediocres; vertex apice concolor.
d. Minor, haud depressus. Metatarsus posticus dentibus ordinariis armatus.—[*mutus*, Sss. (Guiana).]
dd. Major, subdepressus. Metatarsus posticus dentibus immensis armatus (Brazil?).—*silens*, Sss.
cc. Ocelli majusculi, intermedius transversus. Vertex apice et frons supra lutei.—1. *flavifrons*, sp. n.
bb. Palporum articulus ultimus infundibuliformis, apice dilatatus.
c. Oculi minus prominuli. Corpus depressiusculum, fronte convexiuscula.—[*telskii*, Sss. (S. America).]
cc. Oculi prominuli, corpus haud depressum.—[2. *timidus*, sp. n.]
ccc. Species incomplete cognita.—3. *diversus*, Walk.
aa. Tibiarum foramen rimæforme. Palporum ultimus articulus apice trigonalis. Ocelli grandes, albidi.—[*peruvianus*, Sss. (Peru).]

1. **Aphonus flavifrons**, sp. n. (Tab. XIII. figg. 31, 32.)

♂. Fulvo-rufescens, pubescens. Caput supra breve, rufo-castaneum. Verticis rostrum parallelum, quam primus articulus antennarum paulo latius, haud sulcatum, longius quam latum, basi foveolatum. Ocelli majusculi, in lineam transversalem exserti; intermedius minor, in basi foveolæ rostri locatus. Scutellum faciale transversum, humile; ejus processus inter-antennalis latus. Vertex ad ocellos et scutellum faciale flava. Oculi valde convexi, antrorsum prominuli. Ultimus articulus palporum maxillarium trigonalis, æque latus ac longus, vel latior, securiformis. Antennæ crassiusculæ, flavæ. Pronotum transversum, nitidum, maculis piriformibus 2, margine anteriore fusco-punctato, margine posteriore arcuato, subbisinuato, deplanato. Lobi laterales elongato-quadrati, valde rotundati, margine infero arcuato. Elytra modice longa, rufescentia, supra irregulariter flexuoso-reticulata, cantho toto pallido, fusco-maculato. Vena mediastina 3–5-ramosa. Alæ modice caudatæ, apice fusco-tesselatæ. Pedes breves. Tibiæ anticæ utrinque planæ, tympano in latere interno oblongo, in latere externo nullo. Femora 1ª–2ª fusco-marmorata; anteriora extus fusca. Femora postica brevia, robusta, crassa, extus vitta longitudinali nigra; margine infero nigro-maculoso. Tibiæ posticæ haud compressæ, subtus rotundatæ, castaneæ; supra spinis mediocribus 5:4 in dimidia parte distali exsertis, apice imo brunneis. Spinæ, calcaria pedum et ultimus articulus tarsorum, lutea. Metatarsus posticus supra dentibus longiusculis 1:3 armatus. Abdomen castaneum. Cerci dimidia parte apicali fusco-annulati, alarum apicem attingentes. Lamina infra-genitalis longissima, compressa, apice quadrato-incisa, subtus valde canaliculata, utrinque carinam rotundatam, posterius arcuato-divergentem obferens; apice ultra illas utrinque cylindrico-elevata. stylis gracillimis 2 luteis instructa.

♂. Long. corp. 15; pronot. 2·5, latit. 3·6; elytr. 3·5, latit. supra 3·5; femor. post. 11·5 millim.

FIGURES:—Fig. 31, the male insect*.—Fig. 32, the head from in front.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

A small species, most nearly allied to *A. mutus*, Sss., from Guiana, but differing from

* Incorrectly marked ♀ on the Plate.

it in coloration, and also in having the ocelli placed in a transverse row, and in the lateral lobes of the pronotum being much rounded at their angles.

[2. **Aphonus timidus,** sp. n.

♂. Fusco-testaceus; capite supra pronotoque castaneis, punctatis, fusco-pilosis. Caput trigonale, subtus testaceum. Antennæ fusco-annulatæ. Ocelli mediocres, invicem propinqui, in arcum ordinati. Ultimus articulus palporum maxillarium elongato-securiformis, niger. Verticis rostrum breve. Oculi prominuli. Pronotum maculis 2 piriformibus vittisque 2 antice convergentibus, rufis; margine postico subarcuato. Metanotum excavationem fere transverse-quadratam obferens; hæc anterius per cesticulum arcuatum marginatum margineque postico prominulo. Elytra corporis longitudine, irregulariter densiuscule in longitudinem reticulata; vena principali nigro-maculosa; campo dorsali fascis obliquis 4–5 brunneis; campi lateralis vena mediastina ramis 5–7 elongatis. Alæ cinereæ, breviter caudatæ. Pedes rufo-castanei. Tibiæ anteriores compressi, vix dilatati, latere interno tympano rhomboidali membranaceo grandi instructo. Tibiæ posteriores rectæ, tota longitudine confertim et ad basin serratæ spinisque 5 : 4 armatæ. Spinulæ inter spinas numerosæ (margine interno: 6, 5, 4, 1; externo: 6, 5, 3, 3). Metatarsus dentibus 1 : 2 vel 1 : 3 armatus. Cerci fusco-maculosi.

♂. Long. corp. 22; pronot. 3·2, latit. 3·6; elytr. 16; femor. post. 13·2 millim.

Hab. COLOMBIA (*coll. Brunner v. W.*: no. 10,682).

This species has not the body attenuated anteriorly; the hind margin of the pronotum does not form a rounded angle, as in *A. telskii*; and the last joint of the maxillary palpi is less securiform than usual.—The description is taken from my MSS. notes.]

3. **Aphonus diversus,** Walk.

Platydactylus diversus, Walk. Cat. Derm. Salt. v., Suppl. p. 12 (♀).

Aphonus diversus, Sauss. Miss. Scient. Mex., Orthopt. p. 512. 4; Mélang. Orthopt. 6e fasc. p. 797.

♀. Ferrugineus, pubescens. Palporum maxillarium articulus ultimus infundibuliformis, apice dilatatus, oblique truncatus. Pronotum margine postico arcuato. Elytra ad canthum humeralem pallidiora. Alæ breviter caudatæ. Femora postica extus fusco-bivittata. Tibiæ posticæ 6 : 6-spinosæ. Ovipositor abdomine longior, fere rectus. Cerci illum superantes.—Long. 10 lin.

Hab. NICARAGUA (*Mus. Brit.*).

STENAPHONUS, Sauss.

Stenaphonus, Saussure, Mélang. Orthopt. 6e fasc. p. 797 (1878).

A genere *Aphono*, Sss., differt: corpore gracillimo, pronoto elongato, cylindrico, ovipositore parum elongato sicut in genere *Parœcantho*, deplanato, recto, valvis apicalibus lamellaribus, deplanatis.

The described specimen from Chiriqui seems to exhibit some slight differences from the type, which is not at present available for examination: on the fig. 3 *a* (Sauss. loc. cit.) the hind tibiæ are represented with more numerous denticules. Nevertheless, I cannot regard the specimen before me as belonging to a different species.

1. **Stenaphonus macilentus,** Sauss.

Stenaphonus macilentus, Sauss. Mélang. Orthopt. 6e fasc. p. 806. 11 (♀ ♂), figg. lxxi., 3, 3 *a*.

♀. Gracillimus, fulvo-testaceus. Caput fusco-nigrum, subtus et anterius testaceum. Verticis rostrum

parallelum, longiusculum, haud sulcatum, quam antennarum primus articulus plusquam duplo angustius. Ocelli orbiculares, mediocres, in trigonum latum exserti; anticus minor. Palporum ultimus articulus præcedentibus paulo latior, haud infundibuliformis. Antennæ brunneæ, basi testaceæ. Pronotum elongatum; disci scutellis cordiformibus; lobis lateralibus elongatis, antice late rotundatis. Elytra distincte venosa, cantho humerali basi vitta fusca; campo dorsali venis distinctissimis, oblique longitudinalibus 10, subrectis; reticulatione inter illas basi et intus areolas rhomboidales formante, extus et apice, per venulas longitudinales et inter illas per venulas transversas, breves, paucas formata. Vena mediastina 8-ramosa. Alæ breviter caudatæ. Pedes breves, valde compressi. Femora antica dilatatiuscula; tibiis basi latere interno tympano elliptico munitis. Femora postica apice fusca. Tibiæ posticæ prismaticæ, spinis 5 : 5 crassiusculis, valde pubescentibus, apice fuscis, plusquam dimidiam longitudinem tibiæ occupantibus dentibusque inter illas 1 vel 2 validis, spiniformibus, refertæ. Abdomen supra fuscum. Ovipositor deplanatus, rectus, marginibus et valvis apicalibus nigris, his deplanatis, lanceolatis, apice hebetatis, extus crenulatis, subtus bicarinatis. Cerci fusco-maculosi.

Var. *a*. Elytrorum venæ fuscescentes.—*b*. Caput pallidum.

♀. Long. corp. 22; pronot. 4·3, latit. 3·5; elytr. 22, latit. supra 3; femor. post. 12·2; ovipos. 9·5 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 feet (*Champion*).—COLOMBIA.

HETERECOUS, gen. nov.

Corpus gracile; antennæ crassiusculæ. Caput et pronotum lævigata. Rostrum verticis longiusculum, angustatum, haud transversum, canthis rotundatis. Elytra ♀ venis elevatis, distinctissimis instructa, late quadrato-reticulata. Pedes breves, modice compressi. Tibiæ anticæ superne planato-rotundatæ, in latere externo tympano instructæ, in latere interno variabiles. Tibiæ posticæ haud compressæ. Ovipositor *deplanatus*, valvis apicalibus depressis, anguste lanceolatis, acutis (Tab. XIII. fig. 34), extus tota longitudine crenulatis; superis paulo longioribus, basi superne transverse carinulatis, margine externo ad carinulam angulum minutum prominulum formantibus.

I regret to have to propose this new genus. The two species referred to it might be included in either *Anaudus*, Sauss., or *Podoscirtus*, Serv.; but the ovipositor, instead of being long, slender, and cylindrical, is short, depressed, and sublamellar, with flattened apical valvæ, as in *Paræcanthus* and in *Stenaphonus*, belonging, in fact, to a very different type from either *Anaudus* or *Podoscirtus*. As I suppose the males have no drum on the elytra, I place *Heterecous* amongst the non-musical Podoscirtites, in which it forms a little group with *Metripus* and *Stenaphonus*, on account of the form of the ovipositor, but distinct from that genus by the anterior tibiæ being perforated. Its position can only be fixed with certainty when the males are known.

Synopsis specierum.

a. Ultimus articulus palporum maxillarium elongato-quadratus. Tibiæ anticæ utrinque tympano instructæ. Elytra completa. Tibiæ posticæ parce denticulatæ.—1. *auditor*, sp. n.

aa. Ultimus articulus palporum infundibuliformis. Tibiæ anticæ intus tympano vix ullo. Elytra abdominis apicem liberantia. Tibiæ posticæ valde denticulatæ.—2. *smithianus*, sp. n.

1. **Heterecous auditor**, sp. n. (Tab. XIII. figg. 33, 34.)

♀. Sat minutus, gracilis, castaneus, subtus cum pedibus testaceus. Caput nitidum; occipite valde convexo; rostro verticis elongato, apice attenuato, minute truncato, puncto impresso. Ocelli minuti, intermedius nullus. Scutellum faciale transversum, brevissimum; ejus processus inter antennas brevissime compressus,

linearis, supra in trigonum minutum dilatatus, apice cum verticis rostro conjunctus. Oculi rotundato-cordiformes. Facies testacea. Palpi apice brunnei. Ultimus articulus palporum maxillarium subcompressus, supra basi tumidus. Antennæ brunnescentes, subannulatæ. Pronotum nitidum, punctulatum, supra æque longum ac latum vel longius, nitidum, impressionibus utrinque 2, pagisque 2 piriformibus inter illas; pone medium punctis impressis 2; canthis interdum subacutis; margine postico arcuato, subangulato; lobis lateralibus margine infero arcuato, latiuscule testaceo-limbato. Elytra corpus superantia; campo dorsali remote quadrato-reticulato, venis in longitudinem obliquis, analibus 3, ulnaribus 4, apice discoidalibus 3; venulis transversis rectis, remotis, areolas quadratas et elongato-quadratas delineantibus. Campus lateralis submembranaceus, venis fulvis; vena mediastina 3–4-ramosa. Alæ breviter caudatæ. Pedes breves. Tibiæ anticæ in latere interno tympano elliptico instructæ, in latere externo foramine nullo. Femora postica brevia, apice fusca. Tibiæ haud compressæ, in canthis spinis 5:5 armatæ denticulisque paucis, inter spinas 1, 1; in cantho interno inter spinas 2 primas tantum denticulo unico; facies supera inter spinas tuberculis nigris 2; basi ad constrictionem vitta transversa nigra, apiceque nigro. Metatarsi postici breves, dimidia parte apicali nigra, supra extus dentibus 1 vel 2, intus 1; calcaribus parum longis, nigris. Secundus articulus tarsi totus, tertius basi et apice, nigri. Abdomen supra piceum; lamina supra-analis lutea, apice rotundata, basi tuberculis irregularibus 2 nigris notata. Cerci lutei. Ovipositor parum longus, marginibus externis nigris, valvis fuscis, anguste lanceolatis, apice acutis, extus tota longitudine crenatis, supra basi carinulam transversam obferentibus (fig. 34).

♀. Long. corp. 13·5; pronot. 2·8; elytr. 13·3, latit. supra 5·5; femor. post. 7·5; ovipos. 6 millim.

FIGURES:—Fig. 33, the female insect.—Fig. 34, the ovipositor from above.

Hab. PANAMA, Volcan de Chiriqui (*Champion*). —COLOMBIA.

2. **Heterecous smithianus,** sp. n. (Tab. XIII. fig. 35.)

♀. Fulvo-rufescens. Caput et pronotum lævigata. Occiput parum tumidum. Verticis rostrum convexiusculum, utrinque haud acute marginatum, apice sulcatum, quam primus articulus antennarum valde angustius. Ocelli minuti, in trigonum latum exserti, postici majores, laterales. Antennæ fuscæ, basi rufæ, apice? Scutelli facialis processus frontalis quam vertex paulo latior. Ultimus articulus palporum regulariter infundibuliformis. Pronotum æque longum ac latum, antice vix coarctatum; margine postico arcuato, subangulato; lobis lateralibus margine infero subrecto, angulis haud late rotundatis; canthis humeralibus nullis; margine laterali et postico nigris. Elytra quam abdomen paulo breviora, remote venosa, venis prominulis, rufo-fuscis, excepto vena discoidali et media. Campus dorsalis venis oblique longitudinalibus 7, venulis transversis sat regularibus, areolas quadratas vel rhomboidales delineantibus. Vena mediastina 3–4-ramosa. Alæ abbreviatæ. Pedes breves. Tibiæ anticæ supra rotundato-planatæ, latere externo tympano majore, elliptico, latere interno puncto impresso notatæ. Femora postica robusta. Tibiæ subdepressæ, latere superiore lato, marginibus tota longitudine valde spinuloso-denticulatis, spinis insuper 5:5 in exsertione nigro-cinctis; margines inter illas denticulis 3 instructæ. Metatarsi postici subtus et apice fusci, superne dentibus 2:3 armati. Abdomen concolor. Lamina supra-analis in medio trapezino-producta, angulata. Cerci apice pallidi. Lamina infra-genitalis truncata. Ovipositor deplanatus, femori valde brevior, valvis apicalibus nigris, acute lanceolatis, extus crenulatis.

♀. Long. corp. 15; pronot. 3; elytr. 10·4; femor. post. 10·3; ovipos. 6 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

Fam. LOCUSTIDÆ *.

This large family has been divided by Brunner von Wattenwyl into numerous subfamilies in a very natural way. It differs from the Gryllidæ in the four-jointed tarsi (the tarsi of the Gryllidæ having three joints only), and in the form of the stridulating-organ of the males, which, when present, is much reduced and confined to the anal field of the elytra.

The Gryllacrinæ and Stenopelmatinæ form in the family Locustidæ a separate section, presenting a kind of link to the Gryllidæ. Indeed, in these two tribes the elytra are still, as in the Gryllidæ, divided into two fields—a lateral and a dorsal field, this latter being formed by the fusion of the discoidal and anal fields. But in these insects the two fields are not so well separated as they are in the Gryllidæ; and the elytra being more or less membranaceous they mould themselves, when at rest, on the body of the insect, becoming somewhat convex on the back, and forming a sort of cylindrical case to the abdomen. The venulation of the elytra has also some analogy with that of Gryllidæ, all the longitudinal veins being well separated from their base, which is not the case in other tribes of Locustidæ.

Tribus STENOPELMATINÆ †.

Stenopelmati, Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 9 (1888).

Tarsi compressi (articulis primo et secundo laminis lateralibus nullis). Tibiæ anticæ supra in utroque margine spina apicali instructæ. Tibiæ posticæ supra in utroque margine necnon subtus utrinque spinis apicalibus duabus instructæ. (*Brunner.*)

The Stenopelmatinæ are mostly apterous insects, very few of the species belonging to it being furnished with wings.

The males are destitute of a musical organ in the elytra; nevertheless many of the species possess tympani on their anterior tibiæ in both sexes, which proves that these insects stridulate in some way. Brunner von Wattenwyl has shown that musical

* By Dr. Henri de Saussure and Alphonse Pictet.

† Principal work referred to for the Stenopelmatinæ: C. Brunner von Wattenwyl, Monographie der Stenopelmatiden und Gryllacriden, pp. 1–150 (Verh. zool.-bot. Ges. Wien, 1888, pp. 247–394). This excellent work forms a very complete monograph of the Stenopelmatinæ and Gryllacrinæ, and we have followed it throughout. Several of the synopses of species here given to help the identifications have been partly extracted from it with some modifications which were required for the introduction of the new species.

sounds are produced by the rough surface of the inner base of the hind femora rubbing against the short elevated ridges or rugosities on the first segment of the abdomen. This apparatus is similar to that of a portion of Acridiidæ, especially of the Eremobiinæ and of some Pamphaginæ *.

We find in the tribe Stenopelmatinæ two very different types, as in Gryllidæ: a fossorial type, with heavy forms, short robust legs, and strongly armed tibiæ (Tab. XIV. fig. 1); and a terrestrial type, with lighter forms and long legs (Tab. XIV. figg. 12, 19, &c.). The latter do not appear to live so much amongst the grass and bushes as the Gryllidæ; they cannot leap very well, but are good runners.

Group **STENOPELMATITES.**

STENOPELMATUS, Burm.

Stenopelmatus, Burmeister, Handb. ii. p. 720 (1832);—Saussure;—Stål;—Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 13 †.

Synopsis specierum.

a. Corpus totum apterum.

b. Pedes ferruginei.

c. Scutellum faciale Λ-forme, superne parabolicum, per carinam vel sulcum distincte delineatum, sulco intramarginali supero notatum.—1. *sumichrasti*, Sauss.

cc. Scutellum faciale latum, inter antennas articulo primo antennarum triplo vel quadruplo latius, obsolete delineatum, superne obtusissimum.

d. Tibiæ posticæ margine interno spinis 5 armatæ.

e. Caput ab antico visum quam pronotum haud latius.

f. Tibiarum posticarum calcaria interna subæque longa; calcar supero-internum metatarso brevior. Caput et pronotum rufo-ferruginea.

g. Tibiæ posticæ a latere visæ latæ, planæ, supra convexiusculæ.—2. *talpa*, Burm.

gg. Tibiæ posticæ extus teretes.—3. *lessonæ*, Griff.

ff. Tibiæ posticæ longiores quam in congenericis, graciliores, a latere visæ apicem versus gradatim dilatatæ, extus planæ; calcare supero-interno cæteris valde longiore, metatarsum superante. Caput et pronotum fulvo-testacea vel castanea.—[4. *longispina*, Brunn.]

ee. Caput ab antico visum pronoto latius. Tibiæ posticæ a latere visæ apicem versus ampliatæ. (Color testaceus vel testaceo-castaneus.)

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* De Saussure, Additamenta ad Prodromum Œdipodiorum, p. 114.

† *Obs.*—Brunner v. Wattenwyl uses the term "*fastigium verticis*" for the apex of the vertex between the antennæ, this being called by us "*rostrum verticis.*" In the diagnoses which we have been obliged to take from the works of this author (as we have seen no specimens of the species) we have preserved his nomenclature.

f. Antennæ mediocres, primo articulo subtus quadrato. Tibiæ posticæ a latere latiusculæ, extus planæ ; spina quinta marginis interni minuta.

g. Tibiæ posticæ extus 4-spinosæ, lateribus planis, supra subsulcatæ ; spinis brevibus ; illis marginis interni distantibus (excepto spina quinta subæquilongis) ; calcaribus internis subæque longis, compressis, quam dimidius metatarsus haud longioribus. Frons lævigata.—[5. *californicus*, Brunn.]

gg. Tibiæ posticæ extus 2–3-spinosæ ; 5ª spina interna minima.

h. Tibiarum posticarum calcar supero-internum quam intermedium sesquilongius, metatarsum subæquans. Tibiæ posticæ latere externo rotundatæ; marginis interni spina quarta a tertia magis remota ; margine externo ad apicem bispinoso.—6. *irregularis*, Brunn.

hh. Tibiarum posticarum calcar supero-internum quam intermedium paùlo longius ; spinis marginis interni 1ª–4ª æque distantibus.—7. *calcaratus*, Griff.

ff. Antennæ ♂ gracillimæ, primo articulo gracili, quam latiore duplo longiore. Caput immensum, globosum. Tibiæ posticæ latere interno spina quinta cæteris æquilonga ; margine externo apice trispinoso, spinis brevibus armato ; calcaribus internis binis primis subæquilongis, quam metatarsus paulo brevioribus. Frons sparse punctata, inferius plicis transversis rugosa.

g. Tibiæ posticæ longiores, punctulatæ, a latere graciles, teretes, subtus rotundatæ.—[8. *hydrocephalus*, Brunn.]

gg. Tibiæ posticæ breves, politæ, a latere latæ, planæ, subtus compressæ.—9. *comanchus*, sp. n.

dd. Tibiæ posticæ margine interno spinis 4 vel 3 armatæ.

e. Pronotum ut solitum sulco intramarginali instructum.

f. Tibiæ posticæ a latere visæ planæ, margine interno spinis 4 æqualibus armato.—10. *histrio*, Sauss.

ff. Tibiæ posticæ a latere visæ teretiusculæ, margine interno spinis 3 æquilongis armato.—11. *vicinus*, Brunn.

ee. Pronotum sulco intramarginali nullo. Tibiæ posticæ a latere visæ teretes.—12. *guatemalæ*, Brunn.

bb. Color piceus vel niger.

c. Statura minor. Scutellum faciale obsolete delineatum, superne latum, evanidum. Spinæ tibiarum posticarum numero variabili.

d. Nitidus. Facies haud vel parum impresso-punctata. Pronotum totum læve. Femora postica lævia. Tibiæ posticæ a latere visæ teretiusculæ.—13. *minor*, Sss.

dd. Opacus. Facies rugosa, crasse punctata. Pronotum latere impresso-punctatum. Femora postica punctata. Tibiæ posticæ a latere visæ planæ, spinis 4 internis fortioribus armatæ.—14. *nieti*, Sss.

cc. Statura major. Scutellum faciale carinis marginatum, supra antennas valde productum, semiorbiculariter rotundatum, superius arcum marginalem rugatum obferens. Tibiæ posticæ graciles, utrinque spinis 3 longis acutis armatæ.—15. *ater*, sp. n.

aa. Corpus alis plus minus perfectis instructum.

b. Elytra nulla. Alæ squamiformes, longitudinaliter striatæ. Scutellum faciale latum.—16. *sallei*, Sss.

bb. Elytra et alæ explicata, membranacea. Caput et pedes rufo-fulva. Elytra plus minus longa. Scutellum faciale angustum, Λ-forme, carinis marginatum.—17. *sartorianus*, Sss.

1. **Stenopelmatus sumichrasti**, Sauss.

Stenopelmatus sumichrasti, Sauss. Rev. et Mag. Zool. xi. p. 210 (1859) ; Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 16. 1.

♂. Parvus in genere ; supra castaneus, subtus pedibusque fulvus. Caput longiusculum, haud tumidum, flavo-fulvum vel fuscum ; cranium sulco subtili longitudinali divisum. Facies perpendicularis ; scutellum faciale altius quam latius, superne inter antennas longe productum, rotundato Λ-forme, angustum, supra antennas marginatum, infra illas transverse rugulatum. Oculi ovati vel piriformes, margine interno subrecto. Pronotum margine antico fulvo, sinuato ; lobi laterales antice quam postice paulo altiores, angulo anteriore rotundato, parum producto, margine inferiore minime sinuato. Femora intermedia brunneo-umbrata ; postica brunnea, apice fulva. Tibiæ posticæ extus planæ, apice vix incrassatæ, supra 4 : 4-spinosæ ; calcaribus gracilibus, acutis, parum longis ; internis subæqualibus.

Var. *a*. Scutelli facialis processus superior sulco intramarginali arcuato notatus.—*b*. marginibus parum expressis, obsoletis.

♂. Long. 20 ; pronot. 5·5 ; femor. post. 12·5 ; tib. 10·5 millim.

Hab. Mexico, Vera Cruz (*Saussure*).

Resembles *S. histrio*, but very distinct by its narrow frontal Λ-shaped shield.

2. **Stenopelmatus talpa**, Burm. (Tab. XIV. figg. 1–3.)

Stenopelmatus talpa, Burm. Handb. ii. p. 721 (1839) ; Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 16. 2, fig. 1 E.

Stenopelmatus mexicanus, Sauss. Rev. et Mag. Zool. xi. p. 210 (♀) (1859).

Rufo-ferrugineus vel ochraceus ; abdomine fusco. Caput pronoti latitudine ; scutello faciali planulo, crasse sparse punctato, inferius subdepresso, rugulato ; inter antennas articulo primo antennarum quadruplo vel quintuplo latiore, carinis nullis marginato. Pronotum parallelum, angulis anticis haud productis ; sulco præmarginali anteriore profundo. Pedes crassi. Tibiæ posticæ facie laterali plana, supra haud marginata ; margine interno spinis 5 (ultima frequenter minuta) ; margine externo spinis 3 ; calcaribus internis 3 compressis subæquilongis, quam metatarsus brevioribus. (♂ margo internus scrobum antennarum prominulus, rectus.) (*Brunner*.)

♀. Long. 36 ; pronot. 8 ; femor. post. 16 millim.

♂. Long. 34 ; pronot. 8 ; femor. post. 14 millim.

Figures.—Fig. 1, the female insect, somewhat magnified.—Fig. 2, the head from before.—Fig. 3, the end of the abdomen from beneath, showing the short ovipositor.

Hab. Mexico, Cordova, Tuxtla, Oaxaca (*Saussure*).

3. **Stenopelmatus lessonæ**, Griff.

Stenopelmatus lessonæ, Griffini, Bollet. dei Mus. di Zool. della Univers. di Torino, viii. no. 154, p. 3 (1893).

" Fusco-castaneus. Statura modica vel minore. Corpus apterum. Caput grande, oblongum (præcipue in ♀), pronoto latius (♀), vel fere æquilatum (♂) ; vertice et præsertim fronte impressionibus punctiformibus

rugulosis; fastigio inter antennas articulo primo antennarum subquadruplo latiore. Antennæ validæ, breves. Pronotum antice et postice fere æquilatum, impressionibus punctiformibus sparsis, præsertim ad angulum anticum confertis, præditum; margine antico concavo et pilis fulvis minutis sed densis ornato; impressione antica transversa valde explicata; margine postico truncato, lævissime subconcavo; lateribus, angulo antico ♂ non, vel ♀ minime producto. Pedes breviusculi, omnes et toti impressionibus punctiformibus (præcipue in anticis) confertis rugulosi, in ♀ corpore perparum pallidioribus. Femora valida, breviuscula, parum compressa, teretia. Tibiæ posticæ femoribus posticis, præsertim in ♀ distincte breviores, latere externo teretes, apicem versus, non vel obsoletissime ampliatæ, margine externo 3-spinuloso, vel eadem frequenter 4-spinuloso; spinula superiore minima, obtusa; margine interno 5-spinoso, spinis subæquantibus, vel (per exceptionem) 4-spinoso, spinula quinta deficiente, vel etiam 5-spinoso, spina quinta minima; calcaribus internis spinarum duplam longitudinem æquantibus vel superantibus, binis primis fere longitudine æqualibus. Ovipositor brevissimus, robustus, valvulis divisis, apice incurvus."

♀. Long. 27–28; pronot. 6–6·5; femor. post. 10; ovipos. 3 millim.

♂. Long. 23·5–25·5; pronot. 5–6; femor. post. 9–10 millim.

Hab. MEXICO.

[4. **Stenopelmatus longispina,** Brunn.

Stenopelmatus longispina, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 16. 3, t. 5. fig. 1 D.

Hab. NORTH AMERICA, Vancouver.]

[5. **Stenopelmatus californicus,** Brunn.

Stenopelmatus californicus, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 17. 4, t. 5. figg. 1 A–C.

Hab. NORTH AMERICA, Vancouver.]

6. **Stenopelmatus irregularis,** Brunn.

Stenopelmatus irregularis, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 17. 5.

Hab. NORTH AMERICA, Arizona, California.—MEXICO, Sonora, Mazatlan.

7. **Stenopelmatus calcaratus,** Griff.

Stenopelmatus calcaratus, Griffini, Bollet. dei Mus. di Zool. della Univers. di Torino, viii. No. 154, p. 2, fig. (♀) (1873).

"Ferrugineo-testaceus. Modice grandis. Caput magnum, subglobosum, pronoto latius; scutello faciali lato; vertice et fronte minute irregulariter punctatis; mandibulis apice atris. Antennæ validæ. Pronotum ♀ anterius vix dilatatum, angulis lateralibus sat productis. Femora postica valida; tibiæ femoribus paulo breviores, latere planæ, apicem versus obsoletissime dilatatæ, extus 3, intus 5-spinosæ, spinis intus æque distantibus; 5ª minima; calcaribus internis spinis duplo longioribus, primo reliquis paulo longiore."

♀. Long. 28; pronot. 7; femor. post. 12·5; tib. 11 millim.

Hab. MEXICO.

Griffini compares this species with *S. histrio* and *S. talpa.* It agrees with *S. talpa* in the armature of the hind tibiæ, and with *S. californicus* and *S. irregularis* in having the head wider than the pronotum.

[8. **Stenopelmatus hydrocephalus,** Brunn. (Tab. XIV. fig. 4.)

Stenopelmatus hydrocephalus, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 17. 6.

"Crassus, testaceus; abdomine plus minus fusco. Caput maximum; cranio globoso-tumido. Antennæ ♂ graciles. Mandibulæ fuscæ, valde rugosæ. Scutellum faciale latissimum, frequenter sparse punctatum, inferius valde impressum, rugosum ac striatum. Pronotum antice ♀ haud, ♂ dilatatum. Pedes crassi, breves. Tibiæ posticæ graciliores, extus et subtus teretes; spinis intus 5 (4ª et 5ª æqualibus), extus apice 3, brevioribus. Calcaria interna crassa, compressa, ♀ æquilonga, quam metatarsus breviora."

♀ ♂. Long. 36; pronot. 8·5; femor. post. 14 millim.

FIGURE.—Fig. 4, the hind tibia from outside.

Hab. NORTH AMERICA, California.]

9. **Stenopelmatus comanchus,** sp. n.

Statura *S. hydrocephali* et illi simillimus. Testaceus; abdomine fusco. Caput ♀ ♂ maximum. Pronotum in utroque sexu antice dilatatum. Pedes postici breviores. Tibiæ posticæ latissimæ, latere subplanæ, subtus compressæ, spinis intus 5, extus 3.

Long. 39; pronot. 7·5; femor. post. 12 millim.

Hab. NORTHERN MEXICO, Durango (*Höge*).

Differs from *S. hydrocephalus* in the form of the hind tibiæ.

10. **Stenopelmatus histrio,** Sauss. (Tab. XIV. fig. 5.)

Stenopelmatus histrio, Sauss. Rev. et Mag. Zool. xi. p. 210 (1859); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 18. 7.

♂. Statura minore; fusco-testaceus. Caput elongatum, pronoto æquilatum; fronte parce impresso-punctata; genis lævigatis. Scutellum faciale trigonale, æque latum ac longum, apice rotundatum. Pronotum marginibus lateralibus sinuatis, angulis anticis modice productis; lobis lateralibus crasse remote punctatis. Femora postica incrassata. Tibiæ posticæ a latere visæ planæ, basi et apice subæquilatæ; margine externo spinis 3–4, margine interno spinis 4 subæquilongis, armatæ. Calcaria interna 3 æquilonga, quam spinæ marginis interni longiora.

♂. Long. 22; pronot. 5; femor. post. 10; tib. 8 millim.

Hab. MEXICO, Orizaba (*Saussure*).

11. **Stenopelmatus vicinus,** Brunn.

Stenopelmatus vicinus, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 18. 8.

"Testaceus vel fusco-testaceus, pedibus fulvo-testaceis. Caput ab antico ovatum, lævigatum vel genis subrugatis. Scutellum faciale lævigatum, inter antennas quam primus articulus antennarum triplo latior, superne angustatum, rotundatum, utrinque marginatum, sulco intra-marginali arcuato distincto superne notatum. Pronotum angulis vix productis. Femora postica pro genere gracillima; tibiæ graciles, a latere subrotundatæ, supra parum latæ, utrinque spinis 3 acutis armatæ. Calcaria interna æqualia, subgracilia, metatarso valde breviora."

Long. 30; pronot. 7·5; femor. post. 14; tib. 13 millim.

Hab. GUATEMALA.

12. **Stenopelmatus guatemalæ,** Brunn.

Stenopelmatus guatemalæ, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 18. 9.

"Colore fusco-castaneo, pedibus apice pallidis. Caput globosum, pronoto haud latius. Pronotum angulis

anticis haud productis, supra sulco intramarginali deficiente, margine ipso rufescente, ciliato, disco postice fornicato. Femora omnia brevia, crassa. Tibiæ posticæ subteretes, margine externo spinis tribus, margine interno spinis æqualibus, brevibus quatuor armato. Calcaria omnia compressa, brevia, æquilonga. Lamina subgenitalis ♀ lata, ampla."

♀. Long. 24; pronot. 5; femor. post. 8·5; tib. 7 millim.

Hab. GUATEMALA.

13. **Stenopelmatus minor,** Sauss.

Stenopelmatus minor, Sauss. Rev. et Mag. Zool. xi. p. 210 (1859); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 19. 10.

Ater, *S. nieti* valde affinis at minor, fronte et pronoto lævigatis, haud rugosis.

Hab. MEXICO, Cordova (*Saussure*); GUATEMALA.

14. **Stenopelmatus nieti,** Sauss. (Tab. XIV. figg. 6, 7.)

Stenopelmatus nieti, Sauss. Rev. et Mag. Zool. xi. p. 210 (1859); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 19. 11.

Statura sat parva. Niger vel nigro-rufescens. Caput ab antico visum oblongum. Frons punctis impressis crassis rugosa. Pronotum postice et in lateribus crasse punctatum, lobis anticis rugosis. Femora postica crasse punctata, superne leviter rugata. Tibiæ posticæ a latere visæ planæ, supra rugulosæ, margine externo trispinoso; margine interno spinis fortioribus (nonnunquam quinta minore) armato. Calcaria interna gracilia, subæque longa, metatarsum æquantia. Metatarsus ♀ gracilis. Ovipositor longior quam in congenericis.

♀. Long. 30; pronot. 7; femor. post. 16; tib. 14; ovipos. 5 millim.
♀. Long. 29; pronot. 7; femor. post. 12; tib. 10; ovipos. 5 millim.
♂. Long. 26; pronot. 6; femor. post. 11; tib. 9 millim.

FIGURES.—Fig. 6, the head of the male from in front.—Fig. 7, the prosternum.

Hab. MEXICO, Cordova (*Saussure*: ♀ ♂.—♂ typus).

15. **Stenopelmatus ater,** sp. n. (Tab. XIV. figg. 8, 9.)

♂. *S. sartoriano* formis simillimus. Frons rugulata, sparse crassiuscule punctata, inferius ad clypeum strigata, lata, superne late rotundata, transverse rugata, infra rugas sulco arcuato notata; ejus carinæ laterales inter oculos latitudine articuli primi antennarum triplo distantes. Pronotum totum læviusculum. Pedes graciles. Tibiæ posticæ apice quam in basi paulo latiores, supra subconvexæ, subgibberosæ, nitidæ, marginibus haud acutis, spinis utrinque 3 ad apicem rufis, apice imo nigro, armatæ. Calcaria interna inæqualia; primum quam spina tertia valde longius. Tarsi graciles, pulvillis testaceis.

♂. Long. 34; pronot. 7; femor. post. 15 millim.

FIGURES.—Fig. 8, the male insect.—Fig. 9, the head from in front.

Hab. COSTA RICA (*Rogers*).

16. **Stenopelmatus sallei,** Sauss. (Tab. XIV. figg. 10, 11.)

Stenopelmatus sallei, Sauss. Rev. et Mag. Zool. xi. p. 210 (1859); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 19. 12.

♀. Fulvo-testaceus vel rufescens. Caput longiusculum, parum tumidum. Facies rugulosa; fronte supra antennas punctata. Oculi ovati, majores. Pronotum margine infero parum sinuato, angulis anticis

itaque parum productis, rotundatis. Elytra nulla. Alæ squamiformes, laterales, metanoti longitudine, subcoriaceæ, fere semi-orbiculares, margine interno valde arcuato, externo recto; politæ, substriatæ. Tibiæ posticæ sat graciles, apice vix dilatatæ, supra vix rugatæ; eorum margines spinis 4:4 vel 4:3 armati. Calcaria interna gracilia, acuta, supera 3 inter se fere æque longa, quam metatarsus breviora. Abdomen infuscatum.

♀. Ovipositor pro genere longiusculus, sicut in *S. sartoriano*.

♂. Lamina infra-genitalis ampla, sat elongata (*Brunner*).

♀. Long. 23; pronot. 6; femor. post. 12; tib. 12; ovipos. 4 millim.

FIGURES.—Fig. 10, the female insect in profile.—Fig. 11, the head from in front.

Hab. MEXICO (*Saussure*); GUATEMALA.

17. **Stenopelmatus sartorianus,** Sauss.

Stenopelmatus sartorianus, Sauss. Rev. et Mag. Zool. xi. p. 211 (1859); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 19. 13.

Gracilis, supra fusco-piceus. Caput, pedes, sternum et venter fulvo-testacea. Caput oblongum; oculi piriformes, majusculi. Frons inter oculos carinis 2 distinctis, inferius divergentibus; primi articuli antennarum latitudine fere duplo distantes. Antennæ fuscæ, articulis 1°–3° fulvis. Pronotum margine antico supra sinuato. Elytra et alæ nigrescentia vel picea, ♀ abdominis apicem liberantia, ♂ abdomen superantia. Alæ in requiete ♀ elytra leviter superantes, ♂ caudatæ, ad dimidiam tibiam posteriorem extensæ. Pedes subgraciles. Tibiæ posticæ elongatæ, a latere basi et apice æque latæ, subcanaliculatæ, marginibus superioribus spinis utrinque 4; internis paulo majoribus. Calcaria interna inæqualia; primum quam spina quarta tibiæ paulo longius. Tarsi postici longi, quam tibiæ paulo breviores, articulo ultimo gracillimo. Lamina infra-genitalis ♂ plana, quadrata vel apice rotundata.

♀. Long. 30; pronot. 7; femor. post. 14; elytr. 17 millim.

♂. Long. 25; pronot. 6; femor. post. 14; elytr. 26 millim.

Var. 1. *brachypterus*. Elytra rudimentaria, dorsalia, tantum abdominis primum segmentum tegentia, intus contigua vel haud contigua. Alæ elytra haud vel vix superantes. Calcaria tibiarum posticarum valida; superiores 2 interna spinæ quartæ tibiæ valde longiora.—♀. Long. 40; elytr. 6 millim.

Var. 2. ♂. Alæ ut in feminis breviter caudatæ.

Var. 3. *Larva*. Nigra; capite et pedibus flavo-testaceis; femoribus posticis nonnunquam fuscis, apice flavo-testaceis.

Hab. MEXICO (*Saussure*), Oaxaca (*Schumann*); GUATEMALA, El Tumbador, Las Mercedes, Capetillo (*Champion*); COSTA RICA (*Rogers*).

The frontal scutellum in this species is narrow, in the form of a rounded Λ (but often effaced at the top), flat, finely punctured, and bordered with acute carinæ.

Group **ANOSTOSTOMATITES.**

Anostostomata, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 9.

SCHŒNOBATES, Sauss.

Schœnobates, Saussure, Rev. et Mag. Zool. xi. p. 209 (1859); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 29.

Synopsis specierum.

a. Corpus alatum. Elytra dimidium abdomen superantia. Pronotum postice valde productum; ejus processus parabolicus; lobis lateralibus margine postico rectangulatim inciso.—1. *mexicanus,* Sss.

aa. Corpus apterum. Pronotum postice parum productum.

b. Validus. Pronotum postice rotundato-productum, metanotum obtegens, in longitudinem carinulatum; lobis lateralibus antice subrectangulis. Spinæ tibiarum posticarum 11 : 10.—2. *apterus,* Brunn.

bb. Minor. Pronotum postice parum productum, metanotum liberans, haud carinatum; lobis lateralibus rotundatis.—3. *saltator,* sp. n.

1. **Schœnobates mexicanus,** Sauss. (Tab. XIV. figg. 12–15.)

Schœnobates mexicanus, Sauss. Rev. et Mag. Zool. xi. p. 209 (1859); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 29. 1, t. 6. fig. 8 B.

S. aptero minor, fulvescens, fusco-marmoratus, subtus testaceus. Caput pallide testaceum, cranio infuscato. Antennæ fulvæ, articulis basalibus fusco-notatis. Pronotum supra fusco-marmoratum, postice productum, linea longitudinali elevata, in ♂ distinctiore; lobi laterales dimidiam longitudinem pronoti æquantes, per incisuram humeralem profundam a processu perdistincte separati; eorum angulo postico in lobulum rotundatum producto. Elytra minuta, oblonga, segmentum tertium abdominis haud superantia. Femora postica subtus spinulis paucis armata.

♀. Ovipositor sensim incurvus. Lamina infra-genitalis elongato-triangularis, in spinam elongatam producta.

♂. Segmentum anale spinulis binis, cercis appositis, apice acuto uncinatim recurvo, subappresso, ægre distinguendi, instructum. Lamina supra-analis rectangula. Appendiculi copulares teretes, acuti, apice leviter ad exteriorem curvati *. Lamina infra-genitalis elongata, V-formiter incisa.

♀. Long. 18–23; pronot. 6–8; elytr. 8–9; femor. post. 18–24; ovipos. 10–12 millim.

♂. Long. 20; pronot. 7·5; elytr. 8; femor. post. 20 millim.

Figures.—Fig. 12, the male insect.—Fig. 13, the head from in front.—Fig. 14, the end of the abdomen from beneath.—Fig. 15, the insect in profile (different specimen).

Hab. Mexico, Orizaba (*Saussure*).

2. **Schœnobates apterus,** Brunn.

Schœnobates apterus, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 30. 3, t. 6. fig. 8 A.

Major, apterus, fulvo-testaceus, superne fusco-marmoratus vel infuscatus, superne a fastigio verticis per totam longitudinem corporis carinatus. Pronotum postice rotundatum, posterius corrugatum, plicis elevatis premarginalibus instructum; lobis lateralibus postice arcuato-rotundatis, margine inferiore cum margine posteriore ad unum continuo, incisura humerali nulla. Femora postica subtus margine interno spinulis minimis 3–5 armata. Tibiæ posticæ in utroque margine spinis æqualibus 10. Meso- et metanotum abdominisque segmenta prima rugulis longitudinalibus instructa.

♀. Ovipositor parum incurvus. Lamina infra-genitalis triangularis, in spinam elongatam producta.

♂. Segmentum anale spinulis cornutis instructum. Appendices copulares teretes, recti, apice leviter arcuati.

♀. Long. 30; pronot. 10; femor. post. 29; tib. 27; ovipos. 15 millim.

♂. Long. 29; pronot. 10; femor. post. 28; tib. 26 millim.

Hab. Guatemala (*Oltramare, Mus. Genavense*).

* When at rest, these appendages appear contiguous, but they are movable at the will of the insect.

3. **Schœnobates saltator,** sp. n. (Tab. XIV. fig. 16.)

Flavo-testaceus, supra fusco-tessellatus, vel castaneus, flavo-punctatus et maculosus. Caput ab antico visum angustulum, ocello flavo distincto notatum. Vertex inter antennas compressus, cum cranio polito carinulatus. Pronotum postice truncatum, margine posteriore supra vix arcuato, disco flavo-maculoso; lobi laterales antice valde rotundati. Pedes fusco-marmorati. Tibiæ posticæ supra spinis 7 : 9. Lamina infra-genitalis ♀ acute trigonalis. Ovipositor basi latus, in medio coarctatus, dehinc paulum dilatatus.

♀. Long. 20; pronot. 5; femor. post. 16; ovipos. 10 millim.

Hab. Costa Rica, Volcan de Irazu 6000 feet (*Rogers*).

[PHERTERUS, Brunn.

Pherterus, Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 38 (1888).

The genera *Pherterus* and *Glaphyrosoma* are closely allied and have not been sufficiently well defined by Brunner von Wattenwyl. It is principally in the form of the anal pieces that the true distinctive characters are to be found; we therefore give a fresh diagnosis of each of them *.

Corpus compressum, nitidissimum. Lobi laterales pronoti margine infero arcuato. Tibiæ anticæ supra utrinque spinosæ. Tibiæ posticæ subtus margine externo spinis minoribus 2–3 instructæ (anne in omnibus speciebus incertum est); eorum calcaria intermedia utrinque longissima, quam superiora duplo longiora; calcar supero-externum a secundo valde remotum, in margine externo tibiæ exsertum. Lobi mesosternales trigonales. Lamina supra-analis brevissima, complete transversa, incisa, in medio complete divisa.

♀ ♀. Lamina infra-genitalis rotundata. Ovipositor longe falcatus, valde compressus, acutus.

♂ ♂. Ultimum segmentum dorsale (9^{m}) margine postico transverse recto. Lamina supra-analis illum breviter superans, transversa, latissima (segmentum abdominis imitans), margine postico profunde inciso. Lamina infra-genitalis quadrata, convexiuscula, margine postico inter stylos sinuato, biangulato; stylis cylindricis longiusculis. Appendices anales laterales nulli. Apertura apicis abdominis per lamellas 2 simul sumptas angulum recedentem formantes, clausa. Lamella supera rotundato-triangularis, perpendicularis ejusque angulus superior in incisura laminæ supra-analis aptatus. Lamina inferior subhorizontalis, rotundata; basi aream trigonalem subelevatam præbens, impressione elongato-punctiformi notata; margine postico stylis 2 corneis titillatoribus invicem remotis, basi dilatatis, apice arcuatis, simul sumptis forcipem imitantibus, armato.

The anal pieces in the males of the Locustidæ are very complicated in structure and require a long study before they can be compared and homologized in the various species. The enclosing piece here described must be considered as the penis. Its inferior part is very distinct as such in *Glaphyrosoma*, in which it is elongate, thick, and rounded. In *Pherterus* this part appears to be lamellar and chitinized (the real structure, however, can only be made out when fresh specimens are available for

* They may be distinguished as follows :—

Pherterus.—Inferior margin of the lateral lobes of the pronotum arcuate. Infra-genital plate of the females rounded. Supra-anal plate of the males (10th abdominal tergite) very short, notched. Anal appendages (♂) not apparent.

Glaphyrosoma.—Inferior margin of the lateral lobes of the pronotum straight. Infra-genital plate of the females triangular, acute. Supra-anal plate of the males concealed under the 9th abdominal tergite. Anal appendages large.

examination). The small superior reflexed acute-triangular lamella, which closes the anus from below, is only a sort of appendage of the base of the real penis. The homologues of these pieces may be found in other Locustidæ, *i. e.* in *Decticus*, in which genus the penis forms a thick rounded fleshy mass, divided in superimposed lobes, and presenting at the base a sort of separate part, which, when removed, appears as if formed of two lobes, with their inner margins chitinized and black. The superior reflexed lamella in *Pherterus* and *Glaphyrosoma* must be the homologue of this basal mass. In different Phaneropterinæ there is also at the base of the penis a sort of pyramidal tubercle, which is probably another modification of the same part.

Synopsis specierum.

a. Tibiæ posticæ rectæ vel vix arcuatæ.

b. Tibiæ anticæ supra in medio utrinque spina unica armatæ.—1. *göldianus*, sp. n.

bb. Tibiæ anticæ supra spinis extus 3, intus 2–3 armatæ.—2. *cubensis*, de H.

aa. Tibiæ posticæ arcuatæ. Tibiæ anticæ supra spinis extus 2, intus 2–3 armatæ.—3. *brasiliensis*, Brunn.

1. **Pherterus göldianus,** sp. n.

Fusco-castaneus, subtus testaceus; pedibus rufescentibus vel rufis; ocellis, genis extus ad oculos et ore, luteis. Oculi ovati etsi infere rotundati. Frons superne frequenter subcompressa, lutea, fusco-marginata; ocello reverso-ovato (vel obsoleto). Pronotum antice truncatum, postice supra vix arcuatum, marginibus lateralibus paulum arcuatis, angulo antico obtuso. Femora apice obscura. Tibiæ anticæ supra in medio vel ante medium utrinque spina una armatæ (spina interna valde majore); tibiæ intermediæ supra spinis intus 3, extus 2 majoribus instructæ. Tibiæ posticæ rectæ vel subrectæ, supra fere tertia parte basali mutica, utrinque spinis 9–10, subtus spinis 2–3 appressis in margine externo. Calcaria secundæ paris utrinque quam calcar superum duplo longiora; internum articulis 3 primis tarsi fere æquilongum. Cerci punctati.

♀. Ovipositor grandis, falcatus, arcuatus, acutissimus, valde compressus, quam femur dimidium longior. Lamina infra-genitalis latiuscula, fere semiorbicularis, vel rotundato-subtrigonalis.

♂. Lamina supra-analis brevissima late transversa, latissima, obtuse incisa (ultimum segmentum illudens), ab infero visa in medio bidentula *. Lamina infra-genitalis quadrata, in medio inter stylos obtus-angulatim incisa, vel sinuata, biangulata; stylis cylindricis, obtusis (subtus sulcatis), dimidiam laminam infra-genitalem longitudine vix æquantibus. Lamina inferior orificii analis titillatores 2 corneos minutos gerens; hi invicem remoti, basi dilatati, apice leviter incurvi, forcipem formantes.

Var. *a*. Color rufescens.—*b*. Pedes fuscescentes.

♀. Long. corp. 20–24; pronot. 8–9; femor. post. 19–24; ovipos. 12–18 millim.

♂. Long. corp. 18–21; pronot. 7–8; femor. post. 18–21·5 millim.

Hab. Brazil, Rio Janeiro (*Göldi*), Santa Catharina.

A female specimen was bearing a large *Gordius*.

2. **Pherterus cubensis,** de Haan.

Pherterus cubensis, de Haan, Bijdr. Kenn. Orthopt. p. 218 (1842); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 38. 1, t. 6. fig. 15.

Rufo-castaneus; pedibus pallidioribus.

Hab. Brazil, Bahia; Cuba; Haiti, Port au Prince.

* Its two small teeth are due to the conformation of the upper margins of the notch.

3. **Pherterus brasiliensis,** Brunn.

Pherterus brasiliensis, Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 38. 2.

Rufo-castaneus; tibiis omnibus dimidio apicali luteo.

Hab. Brazil, Santa Catharina.]

GLAPHYROSOMA, Brunn.

Glaphyrosoma, Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 39 (1888).

This genus has been separated from *Pherterus* on account of the anterior tibiæ bearing no spines on their superior face; but this character is not general, as *G. aztecum* bears one spine, although it belongs by all its other characters to *Glaphyrosoma.*

Generi *Phertero* habitu simillimum. Lobi laterales pronoti margine infero recto vel in medio subsinuato; angulo antico rotundato. Tibiæ anticæ supra inermes vel spina armatæ. Tibiæ posticæ subtus inermes; eorum calcaria 2 supera utrinque æquilonga. Calcaria supera bina ab intermediis æque distantia. Lobi mesosternales trigonales, haud acute producti. Lamina supra-analis: ♀ transversa, in medio divisa.

♀ ♀. Lamina infra-genitalis trigonalis. Ovipositor falcatus, valde compressus, minus longus, acutus.

♂ ♂. Ultimum segmentum dorsale (9^{m}) grande, utrinque sinuatum, margine postico in medio producto, vel inciso. Lamina supra-analis transversa, in medio infra illum abscondita, tantum in latera supra cercos conspicua. Lamina infra-genitalis convexa, quam lata brevior, apice biimpressa, stylos 2 brevissimos obtusos gerens. Appendices anales laterales juxta cercos longi, styliformes, deplanati. Claustrum apicis abdominis illis marium generis *Pherteri* haud dissimilis, sed potius excavatum quam angulum recedentem formans; ejus lamella supera minuta, anguste acute triangularis, compressa, sulcata, utrinque carinata; apex sulcato-spiniformis, incisuram ultimi segmenti dorsalis leviter superans; ejus pars infera elongata, subperpendicularis, crassa, apice rotundata, supra subexcavata, basi aream obsoletam minutam puncto elongato impresso notatam obferens.

Synopsis specierum.

a. Tibiæ anticæ supra spina armatæ.—1. *aztecum,* sp. n.

aa. Tibiæ anticæ supra inermes.

b. Paulo major. Pronoti lobi laterales æque alti ac lati.—2. *mexicanum,* Sss.

bb. Minor. Pronoti lobi laterales paulo longiores quam altiores.—3. *gracilis,* Brunn.

1. **Glaphyrosoma aztecum,** sp. n. (Tab. XIV. fig. 19.)

♀. Fusco-testaceum, subtus testaceum. Pronoti lobi laterales valde longiores quam altiores; margine infero recto; angulo postico minute, antico late, rotundatis. Tibiæ anteriores supra ultra medium in margine interno spina unica armatæ. Tibiæ intermediæ supra spinis 3:2. Lamina infra-genitalis ♀ acute trigonalis. Ovipositor testaceus, femori dimidio brevior; gradatim attenuatus, acutus.

♀. Long. corp. 23; pronot. 6; femor. post. 18; ovipos. 9 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

2. **Glaphyrosoma mexicanum,** Sauss. (Tab. XIV. figg. 17, 18.)

Daihinia mexicana, Sauss. Rev. et Mag. Zool. xi. p. 212 (1859).

Glaphyrosoma mexicanum, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 40. 1.

Testaceum, nitidum; corporis segmentis omnibus margine postico fusco limbato. Pronoti lobi laterales fere æque alti ac lati, angulo postico fere rectangulo, rotundato, margine infero leviter subsinuato.

Var. Corpus supra fusco-castaneum, segmentis basi rufis.

♀. Lamina infra-genitalis triangularis, in longitudinem sulcata. Ovipositor femur dimidium longitudine æquans.

♂. Ultimum segmentum dorsale posterius impressionibus transversis 4, vel plica inæquali transversa, notatum, margine postico late obtusangulatim inciso. Lamina supra-analis obtecta. Lamella supera claustralis triangularis, fere retro-reflexa, apice sulcato-mucronato. Appendices anales subdepressæ, acuminatæ, apice per unguem basi subinvaginatum terminatæ. Lamina infra-genitalis brevis, angulatim incisa, rotundatim bilobata, stylis 2 minutis instructa.

♀. Long. corp. 23; pronot. 7; femor. post. 20; ovipos. 10 millim.

♂. Long. corp. 24; pronot. 7; femor. post. 18·5 millim.

FIGURES:—Fig. 17, the male insect.—Fig. 18, the head from in front.

Hab. MEXICO, Mirador in Vera Cruz (*Saussure*).

3. **Glaphyrosoma gracile,** Brunn.

Glaphyrosoma gracile, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 40. 2, t. 6. fig. 17.

Supra fusco- vel rufo-castaneum, nitidum, subtus testaceum. Pronoti lobi laterales longiores quam altiores, angulo antico obtusiore, margine infero horizontali, recto, haud vel vix sinuato. Pedes rufescentes, brunneo-umbrati. Cerci et anus fulvi.

♀. Ovipositor femori postico fere dimidio brevior. Lamina infra-genitalis triangularis, nonnunquam apice acute producta.

♂. Ultimum segmentum dorsale supra planulum, postice trapezinum, transverse strigatum, piloso fimbriatum. Lamina claustralis illi *G. mexicani* similis. Appendices anales compressæ, latiusculæ, valde pilosæ, valde arcuatæ, apicem versus haud attenuatæ, apice compresso, rotundato; dextra supra in medio semiorbiculariter sinuata; sinistra in margine supero ante apicem dentem trigonalem formans.

Var. *a.* Caput pallide testaceum, supra fuscum; corporis segmenta omnia utrinque testaceo-limbata.—*b.* Corporis segmenta omnia rufescentia, margine postico fusco.

♀. Long. 20; pronot. 7; femor. post. 17; ovipos. 9 millim.

♂. Long. 22; pronot. 6; femor. post. 20 millim.

Hab. MEXICO, Cordova, Orizaba (*Saussure*), Misantla; GUATEMALA (*Mus. Genavense; Mus. Stuttgart*).

Group **MIMNERMITES.**

Mimnermi, Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 11 (1888).

PHOBEROPUS, gen. nov.*

Corpus crassum. Caput mediocre; vertice declivi, compresso, cum fronte contiguo; hoc infere trigonali-quadrato, ocellos includente. Antennæ invicem sat propinquæ, sed haud contiguæ. Oculi minuti, orbiculares, strigosi, margine interno recto. Pronotum cylindricum, retro leviter dilatatum, marginibus rectis; ejus lobi laterales longiores quam altiores; margine infero subrotundato, angulo anteriore late rotundato, posteriore obtusangulo. Pedes breves, robusti, præsertim postici. Femora anteriora et intermedia compressa, subtus canaliculata; anteriora mutica; intermedia subtus margine interno apice spinis 2 minutis armato. Tibiæ anteriores supra inermes; intermediæ margine interno spinulis 2, externo 1; binæ subtus utrinque spinis 3–4 armatæ. Femora postica perrobusta, apice parum attenuata, supra apice et in canthis inferis granulosa, subtus late canaliculata, marginibus acutis; interno subinermi, ac dimidia parte apicali compressa; externo ultra medium spina valida dentiformi et ante apicem dente bimucronato armato, inter dentesque crenulato vel dentulis 4 instructo. Tibiæ posticæ curvatæ, femoribus æquilongæ, subtus rotundatæ et granulatæ, margine interno spina minuta præapicali armata;

* *φοβήροπους, pedibus formidabilibus.*

supra late planæ, utrinque spinis 5 latis ac brevibus, inter illasque dentibus minutis serratiformibus hebetatis 4–6, instructæ. Calcaria brevia, superiori-interno longiore. Lamina supra-analis ♂ brevis, transversa, apice truncata, sulco profundo divisa. Cerci cylindrici, apice attenuati; articulis densissimis, ultimis 2 gracilibus; penultimo brevissimo, ultimo elongato. Lamina infra-genitalis magna, suborbicularis, apice truncata, stylos 2 cylindricos hebetatos gerens.

Phoberopus belongs to the same group as the African genus *Onosandrus*, if we follow the method of Brunner von Wattenwyl; but it forms a section characterized by its posterior metatarsi being completely flattened and membranaceous beneath (sulcated in dried specimens), with their inferior face remarkably wide, and occupied in their entire length by a single pulvillus, instead of by two pulvilli as in the allied genera.

1. **Phoberopus championi,** sp. n. (Tab. XIV. figg. 20–22.)

♂. Fusco-piceus, subtus testaceo-piceus, superne linea fulva percurrente. Tibiæ anticæ supra inermes; intermediæ supra spinulis 2:1. Femora postica superne, basi excepto, et in marginibus inferis, confertim granulosa; eorum area media in utraque facie lineas transversas remotas granulatasque obferens; tertia parte apicali granulata. Facies infera lata, sulcis 2 longitudinalibus subtiliter exarata; vittam inter illos subtiliter transverse strigosam præbens. Margo internus crenulatus, apice obsolete 1–3-dentatus; margo externus granulatus, ultra medium spinam corniformem maximam, ac ante apicem lobum bidentem gerens (necnon interdum inter spinam et lobum, dentibus minutis 4 armatus). Tibiæ posticæ arcuatæ, facie supera quam facies lateralis æquilata, coriacea, marginibus hebetatis, omnino serrulatis, ac utrinque spinis brevibus crassis 5, armatis; subtus valde granosæ, apice punctatæ. Lamina supra-analis fusca, trapezina, incisa, fissa, extus sinuata. Cerci ultra medium incurvi, in spinam excurrentes, intus trigonali-dilatati. Lamina infra-genitalis rotundata, convexa, truncata, subsinuata; stylis sat minutis, cylindricis instructa.

Var. Femorum posticorum dentes partim obliterati.

Long. corp. 17; pronot. 5; femor. post. 14 millim.

FIGURES:—Fig. 20, the male insect.—Fig. 21, the head from in front.—Fig. 22, the end of the abdomen from above.

Hab. GUATEMALA, Totonicapam 8000 to 10,000 feet, Cerro Zunil 5000 feet (*Champion*).

Group **CEUTHOPHILITES.**

Ceuthophili, Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 12 (1888).

CEUTHOPHILUS, Scudd.

Ceuthophilus, Scudder, Boston Journ. Nat. Hist. vii. p. 434 (1862); Brunner v. W. Monogr. der Stenopelm. und Gryllacr. p. 61.

Synopsis specierum *.

a. Tibiæ posticæ plus minus curvatæ.

b. Femora postica apice gracillima, extus spinis æqualibus 15–18, intus spinulis 12, armata. Tibiæ posticæ parum curvatæ.—[1. *gracilipes,* Hald.]

* Secundum Brunner v. Wattenwyl.

bb. Femora postica apice haud gracilia, subtus ♂ in carina externa spinis inæqualibus armata:

c. spina media majore angulatim curvata, necnon spinis tribus vel quatuor minoribus armata. Tibiæ posticæ parum curvatæ, subtus totæ muticæ.—[2. *lapidicola,* Burm.]

cc. spinis 3–4 grandibus armata nonnullisque minoribus. Tibiæ posticæ valde curvatæ, subtus, apicem versus tuberculis 4, spinuligeris instructa. (Calcaria metatarso dimidio vix longiora.)—[3. *nodulosus,* Br.]

aa. Tibiæ posticæ rectæ, femora quarta parte superantes.

b. Femora postica subtus in carina externa spinulosa:

c. spinis majoribus 8, in carina interna spinulis ultra 20 armata.—[4. *agassizi,* Scudd.]

cc. Femora postica subtus in carina externa spinulis minimis confertis armata.—[5. *stygius,* Scudd.]

bb. Femora postica subtus in carina interna apice spinulosa, in carina externa mutica.—6. *aztecus,* sp. n.

[1. **Ceuthophilus gracilipes,** Hald.

Phalangopsis gracilipes, Hald. Proc. Amer. Assoc. Adv. Sci. ii. p. 346 (1850).

Ceuthophilus gracilipes, Scudd. Bost. Journ. Nat. Hist. vii. p. 430 (1862); Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 63. 1.

Hab. North America, Illinois, New York, New Jersey, Georgia, Colorado.]

[2. **Ceuthophilus lapidicola,** Burm.

Phalangopsis lapidicola, Burm. Handb. der Ent. ii. p. 723 (1839).

Ceuthophilus lapidicolus, Scudd. Bost. Journ. Nat. Hist. vii. p. 435.

Ceuthophilus lapidicola, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 63. 3.

Hab. North America, Georgia.]

[3. **Ceuthophilus nodulosus,** Brunn.

Ceuthophilus nodulosus, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 64. 5, t. 7. fig. 33 a.

Hab. North America, Dallas in Texas.

Certain to be found in North Mexico.]

[4. **Ceuthophilus agassizi,** Scudd.

Rhaphidophora agassizii, Scudd. Proc. Bost. Soc. Nat. Hist. viii. p. 11 (1861).

Ceuthophilus agassizii, Scudd. Bost. Journ. Nat. Hist. vii. p. 439 (1862); Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 65. 7.

Hab. North America, Washington territory, Georgia.]

[5. **Ceuthophilus stygius,** Scudd.

Rhaphidophora stygia, Scudd. Proc. Bost. Soc. Nat. Hist. viii. p. 4 (1861).

Ceuthophilus stygius, Scudd. Bost. Journ. Nat. Hist. vii. p. 438 (1862); Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 65. 8.

Hab. North America, Nebraska, Kentucky, Texas, &c.

Certain to be found in North Mexico.]

6. **Ceuthophilus aztecus,** sp. n. (*Ceutophilus aztecus*, Tab. XIV. fig. 23.)

♀. Fulvescens, omnino brunneo-irroratus. Pronotum postice truncatum, antice parum attenuatum; lobis lateralibus margine infero subarcuato, reflexo, angulo postico rotundato. Coxæ anticæ supra dente minuto acuto instructæ. Femora anteriora pronoto subduplo longiora, subtus margine antico spinulis minutissimis 3 : 4 armata; femora intermedia subtus mutica; postica intus spinulas minus 8 : 9 præbens, extus mutica. Tibiæ posticæ rectæ; calcar intermedio-internum quam superum plus duplo longius. Lamina supra-analis transverse rotundata. Ovipositor rectus, styliformis, rufo-castaneus, apice rufescens, tantum apice imo leviter curvatus; valvis superioribus apice spinula, valvis inferioribus apice dentibus minutis 4 remotis, instructis.

♂. Long. corp. 12; pronot. 3; femor. ant. 6; femor. post. 11; ovipos. 7·5 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*).

Allied to *C. stygius*, Brunn., but much smaller, with longer anterior femora, and the hind femora with small spines.

[UDEOPSYLLA, Scudd.

Udeopsylla, Scudder, Bost. Journ. Nat. Hist. vii. p. 442 (1862).

1. **Udeopsylla robusta,** Hald.

Phalangopsis robustus, Hald. Proc. Amer. Assoc. Adv. Sci. ii. p. 346 (1850).

Daihinia brevipes, Hald. loc. cit. p. 346; Girard, in Marcy's Rep. Explor. of the Red River of Louisiana, p. 257, t. 15. figg. 9–13 (1853).

Udeopsylla nigra, Scudd. Bost. Journ. Nat. Hist. vii. p. 443.

Udeopsylla robusta, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 59. 1, t. 7. fig. 31.

Hab. NORTH AMERICA, Platte River, Nebraska, Missouri, Minnesota, New Mexico, Texas.

Certain to be found in North Mexico (Chihuahua).]

[GAMMAROTETTIX, Brunn.

Gammarotettix, Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 60 (1888).

1. **Gammarotettix californicus,** Brunn.

Gammarotettix californicus, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 61. 1, t. 7. fig. 32.

Hab. NORTH AMERICA, California.]

HEMIUDEOPSYLLA, gen. nov.

Antennæ basi approximatæ, haud contiguæ. Vertex perpendiculariter deflexus, antice inter scrobicula antennarum fere tuberculum minutum rotundatum efficiens. Pronotum anterius paulum attenuatum, antice et postice truncatum; lobis lateralibus elongatis, margine infero subrecto, antico obliquo, angulo postico fere recto. Femora anteriora et intermedia compressa, subtus plana, mutica. Tibiæ anticæ supra teretes, vel subplanæ, inermes. Femora intermedia apice spina geniculari, subtus spinulis paucis, armata. Tibiæ intermediæ supra teretes, in margine postico spinis 2 armatæ, subtus utrinque spinis 2 : 3. Femora postica crassa, apice brevissime attenuata (in modo *Gryllorum*), subtus late sulcata, margine externo, saltem in parte distali, serrulato. Tibiæ posticæ rectæ, quam femora vix longiores, supra utrinque

spinis 5, et spinulis 5 inter spinas armatæ; subtus inermes, rotundatæ; eorum calcaria modice longa, intermedia longiora. Tarsi graciles, subtus carinati, a latere recti. Abdomen apice attenuatum.

♀ ♀. Ovipositor subrectus, tantum imo apice minute incurvus, ac subito acuminatus, subtus denticulatus; valvæ inferiores tota longitudine angustissime, apice paulo latius conspicuæ.

♂ ♂. Lamina supra-analis in medio producta; cerci teretes, acuti. Lamina infra-genitalis sacculiformis, vel convexa, rotundata.

The general form of these insects is like that of *Udeopsylla*, with short thick posterior femora, not narrowly prolonged at the apex; but they resemble *Ceuthophilus* in having the anterior tibiæ unarmed on the upperside, the intermediate femora with a genicular spine, the intermediate tibiæ with two spines above on their upper posterior margin (not two on each margin, as in *Udeopsylla*), the posterior tibiæ rounded and unarmed, beneath furnished at the tip with long spurs (of which the intermediate are much longer than the superior ones), and the posterior tarsi carinated beneath.

The genus might be regarded as forming only a division of *Ceuthophilus*. In any case, the name *Hemiudeopsylla* ought to be retained for *H. genicularis*, which is a very peculiar type.

Synopsis specierum.

I.

a. Genicula femorum posticorum conchata.—1. *genicularis*, sp. n.

aa. Genicula femorum ut solitum sine distinctione.

b. Major. Caput majusculum; vertex apice perpendicularis, acute trigonalis, planissimus.—[2. *platyceps*, sp. n.]

bb. Minores. Vertex apice utrinque depressus, rostrum angustum inter depressiones præbens.

c. Caput supra fuscum. Femora postica crassiuscula. Ovipositor apice subtus remote 3-dentatus.—[3. *californiana*, Scudd.]

cc. Caput supra luteo-vittatum. Femora apice subgracilia. Ovipositor apice subtus obtuse multicrenulatus.—4. *forreriana*, sp. n.

II.

a. Tarsi postici subtus a latere recti.

b. Pronoti lobi laterales postice rotundato-angulati.—[*genicularis*.]

bb. Pronoti lobi laterales postice angulati.—[*californiana*]; *forreriana*.

aa. Tarsi postici a latere subtus articulis apice incrassatis.—*platyceps*.

1. **Hemiudeopsylla genicularis**, sp. n.

♂. Crassiuscula, rufa. Vertex antice perpendicularis, brevis, apice supra antennas leviter angulatus, ac tuberculatus. Pronoti lobi laterales margine posteriore vix obliquo, angulis rotundatis. Femora postica subtus in utroque margine confertim denticulato-serrata; genua *concha articulata basin tibiarum obtegente instructa*; hæc concha piriformis, convexiuscula, apice hebetata, margine externo arcuato, in medio dentem obtusam efficiens, margine interno recto. Tibiæ posticæ rectæ, subtus dense punctatæ. Calcaria intermedia quam superiora, sesqui-longiora quam metatarsus breviora; externa quam interna paulo longiora. Tarsi sensim ut in *H. forreriana*. Lamina supra-analis transverse arcuata. Lamina infra-

genitalis sacculiformis, tumida, subcompressa, apice facie postica planata vel concava.—*H. forrerianæ* paulo major ac robustior ; femoribus posticis subtus fortius serrulatis.

Long. corp. 15 ; pronot. 5 ; femor. post. 11·2 ; tib. post. 11·8 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

The prominent shell-like dilatation of the hind knees is a very extraordinary character and found in no other species of Stenopelmatidæ known to us. *H. genicularis* resembles *H. californica* in form and also in its short hind femora.

[2. **Hemiudeopsylla platyceps,** sp. n.

♂. Tota ferruginea ; caput magnum, orbiculare, supra brevissimum, valde rotundatum, antice valde planatum. Oculi parum convexi. Vertex apice perpendicularis, latus, inter antennas regulariter trigonalis, planissimus, apice acutus, tuberculo nullo. Scrobicula antennarum subcontigua. Antennarum primus articulus deplanatus, latus ; quintus quarto subæquilongus. Pronotum parum compressum, breve, antice et postice truncatum ; lobis lateralibus valde longioribus quam latioribus, margine infero recto, angulis binis leviter rotundatis. Pedes breviusculi. Femora anteriora latiuscula, compressa, pronoto æquilonga, subtus mutica ; intermedia graciliora, subtus spinis 4 : 2 armata, ac spina geniculari distincta. Tibiæ intermediæ supra spinis 2 : 1 armatæ. Femora postica brevia, apice parte gracili nulla, marginibus inferis haud spinosis, dense serrulatis. Tibiæ posticæ rectæ, femoribus æquilongæ, supra spinis 4 : 4 instructæ. Calcaria intermedia quam supera $\frac{1}{4}$ longiora, quam metatarsus $\frac{1}{4}$ breviora. Tarsus subtus carinatus, articulis apice leviter tumidis, a latere haud continuis (sicut in genere *Udeopsylla*). Abdomen compressum ; 8^{m} segmentum dorsale leviter obtusangulum ; 9^{m} tantum in medio leviter perspicuum. Lamina supra-analis inter cercos deflexa, grandis, perpendicularis, quadrata, plana vel subconcava. Lamina infra-genitalis elongato-trigonalis, apice rotundata.

♂. Long. corp. 18 ; pronot. 4·8 ; femor. post. 13 millim.

Hab. NORTH AMERICA, Sancelito in California (*Mus. Genavense*).]

[3. **Hemiudeopsylla californiana** Scudd.

Ceutophilus californianus, Scudd. Bost. Journ. Nat. Hist. vii. p. 438 (1862).

♀. Minuta, fulva, fusco-tesselata. Caput antice subplanatum, vitta longitudinali pallida, facie genis et ore testaceis. Vertex anterius rostrum angustum, prominulum, parallelum, acute marginatum, latitudine $\frac{1}{3}$ primi articuli antennarum, supra planum, formans. Antennarum 4^{s} articulus quam 5^{s} vix longior. Pronoti lobi laterales quam alti duplo longiores, margine infero recto, angulo antice vix rotundato, postico subrectangulo. Femora postica brevia, crassa, partem apicalem graciliorem brevissimam præbentia, margine infero-externo integro, luteo, nigro-punctato ; margine interno apice subtilissime spinuloso. Tibiæ posticæ rectæ ; calcare intermedio-externo plus quam dimidium metatarsum æquante, quam superum duplo longiore ; calcaria interna brevia, subæqualia. Ovipositor subrectus, valvis inferioribus apice subtus crasse obtuse multicrenulatis.

♀. Long. corp. 10·5 ; pronot. 3·2 ; femor. post. 7·5 ; ovipos. 4·8 millim.

Hab. NORTH AMERICA, San Rafael in California (*Mus. Genavense*).]

4. **Hemiudeopsylla forreriana,** sp. n. (Tab. XV. fig. 1.)

Gracilis, supra picea vel fusco-rufa, subtus pallida. Antennæ testaceæ, leviter infuscatæ. Caput pallidum, cranio obscuro. Vertex anterius utrinque subdepressum, rostrum angustissimum rotundatum, apice leviter tumidum, subtuberculatum præbens. Articulus quartus antennarum quam quintus duplo longior. Pronotum antice et postice, mesonotum postice, nonnunquam vitta marginali fusca obsoleta. Pronotum compressum, postice truncatum, lobis lateralibus margine inferiore longiuscule subrecto, margine posteriore paulo minus obliquo quam anterior, angulo posteriore obtusangulo. Pedes umbrati, spinis pallidis.

Femora postica modice crassa, subtus in utroque margine subtiliter confertim serrulata. Tibiæ posticæ subtus inermes, supra inter spinas serrulis 5. Calcaria intermedia marginem superum metatarsi æquantia, quam supera duplo longiora; interna longiora. Metatarsus ultimo articulo tarsi paulo longior. Cerci pallidi, lutei vel supra fusci.

♀. Ovipositor $\frac{2}{3}$ femoris æquans, apice subtus dentulis remotis 3–4. Lamina supra-analis in medio breviter rotundatim producta, tota a basi in medio impressa.

♂. Lamina infra-genitalis tumido-rotundata.

♀. Long. corp. 12; pronot. 3·5; femor. post. 7·5; tib. post. 7·7; ovipos. 5·2 millim.

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer*).

ARGYRTES, gen. nov.*

Corpus apterum. Caput minutum, ovatum, antice planatum, quam pronotum angustius. Cranium minutum; verticis apex supra antennas compressum, rostrum angustum sulcatum efficiens. Oculi piriformes vel potius semiorbiculares, margine interno recto. Antennæ invicem propinquæ, sed haud contiguæ, subgraciles. Scutellum faciale transversum, superius in medio trigonali-productum, a verticis apice valde remotum. Pronotum breve, leviter sericeo-velutinum, compressum, subconicum, valde fornicatum, antice truncatum, postice subarcuatum. Lobi laterales inferius vix attenuati, margine inferiore leviter arcuato, valde marginato, anterius leviter ascendente, angulis hebetato-rotundatis. Mesonotum margine postico in medio leviter productum, arcuatum. Coxæ anteriores antice spina brevi armatæ. Pedes antici graciles, ac longi. Femora 1^a–2^a compressa, subtus canaliculata; antica supra et apice mutica, subtus dimidia parte apicali marginis interni 4–5 spinosa; intermedia intus spina geniculari armata, subtus in utroque margine spinosa. Tibiæ 1^a–2^a longitudine femora æquantes, supra sulcatæ et bicarinatæ, spinulis 2 apicalibus armatæ, subtus biseriatim spinosæ; intermediæ etsi supra biseriatim spinosæ. Tarsi antici pronoto longiores, compressi, inermes, subtus carinati, primo articulo reliquis computatis æquilongo. Femora postica robusta, granulosa, apice gracilia, margine supero-interno serrulato-spinuloso, basi et apice mutico; latere infero late canaliculato, transverse rugulato, per vittam angustam lævigatam subtilissime transverse striolatam diviso, marginibus inferis spinis crassis subarcuatis armatis (quarum primæ et ultimæ perpendiculares, reliquæ horizontaliter deflexæ sunt). Tibiæ femoribus longiores, arcuatæ; subtus teretes, apice subsulcatæ, margine externo et parte apicali marginis interni tuberculis remotis breviter spinigeris instructæ; superne in utroque margine spinulis dentiformibus serrulatæ, necnon spinis majoribus 3:4 in dimidia parte apicali, armatæ. Calcaria intermedia longissima. Tarsi parum compressi, supra inermes, carina dorsali articulorum 1^i–3^i in dentem excurrente, articulo primo reliquis 3 fere æquilongo, subtus acuto.

♂. Lamina supra-analis transversa, brevissima, in medio rotundato-producta. Cerci paralleli, intus subdilatati, extus teretes, recte truncati, angulo externo in dentem obtusum excurrentes. Lamina infra-genitalis subquadrata, convexa, apice late truncata, subsinuata, stylos 2 brevissimos breves gerens.

This genus is a true Ceuthophilinite. The tarsi are much longer than in *Ceuthophilus* and the allied genera; the hind femora have a very strong and extraordinary armature of spines. The vertex is very different also from that of *Ceuthophilus*, being produced into a narrow, parallel, compressed rostrum.

1. **Argyrtes mexicana,** sp. n. (Tab. XV. figg. 2, 3.)

Rufo-ferruginea, fusco punctata et irrorata. Antennæ basi et os testacea; illæ articulorum margine apicali (saltem in parte proximali) angustissime albidæ. Cranium fuscum, trigono occipitali et macula utrinque supra oculos flavidis. Pronotum supra, thorax de reliquo et abdomen fusco-marmorata. Pedes brunneo-marmorati. Femora anteriora intus ultra medium spinis 4:5, intermedia subtus spinis 4:3 armata. Femora posteriora crassa, quarta parte apicali angusta, subsinuata; extus area media in dimidia parte

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* ἀργύρτης, *saccularius*.

apicali granulosa in longitudinem sulco divisa; area supera carinulis obliquis granulosis obsita; latere interno supra, basi excepta, dentato-granuloso. Margo inferior-externus spinis majoribus crassis 5–7 minoribusque intercalatis ad exteriorem deflexis. Margo internus spinis minus inæqualibus, minus numerosis (circ. 12), magna parte ad interiorem deflexis, armatus. Tibiæ graciles, arcuatæ, supra in utroque margine tota longitudine spinulis confertis armatæ spinisque brevibus, conicis intercalatis 3 : 4; subtus tuberculis rotundatis, apice spinula minima incumbente (intus 12–13, extus apice 4) præditæ. Calcar intermedium in utroque latere quam altera triplo longius; internum $\frac{3}{4}$ longitudinem metatarsi æquans. Lamina supra-analis transverse trigonalis (vel rotundata). Cerci crassi breves, subtus sulcati; apice extus in dentem brevem truncatam producti. Lamina infra-genitalis apice lata truncata.

♂. Long. corp. 20; pronot. 5·5; femor. post. 18·5 millim.

FIGURES:—Fig. 2, the male insect.—Fig. 3, the hind leg, seen from outside, magnified.

Hab. MEXICO, Amula in Guerrero 6000 feet (*H. H. Smith*).

Tribus GRYLLACRINÆ *.

Tarsi depressi. Tibiæ anticæ foraminibus (tympanis) destitutæ, supra spinis apicalibus nullis. Tibiæ posticæ supra in utroque margine spina apicali, subtus utrinque spinis apicalibus 2 instructæ. Articuli primus et secundus tarsorum utrinque lamina laterali sulcata instructi. (*Brunner.*)

The insects of this section are remarkable on account of the development of their wings. The elytra are generally long, the wings wide and rounded. The former are membranaceous, and their venulation very complete and evident, the longitudinal nervures being well separated from each other in their entire length, and very easily distinguishable. In consequence, the neuration of the elytra is far from being so characteristic as it is in the Gryllinæ.

The Gryllacrinæ are certainly related to the Gryllinæ, but, taken as a whole, they have greater powers of flight; yet they present also, like the Gryllinæ and the Stenopelmatinæ, a fossorial type. This is found in the genus *Schizodactylus*, a most extraordinary insect, imitating in form and appearance a large *Gryllus*, the elytra resting flat on the back, with the lateral field deflexed perpendicularly on the sides and separated from the dorsal field by a sharp ridge. This type forms an evident passage to the Gryllinæ by its general facies, although the positive characters and the venulation of the elytra are those of Gryllacrinæ, and generally it is the left elytron which in rest covers the right one, as in other Gryllacrinæ; but these insects (like the Gryllinæ) can place at will either elytron uppermost.

The Gryllacrinæ are not musical insects. The males possess no tambourine on the elytra, and neither sex has tympani in the anterior tibiæ. The elytra in repose rest on the dorsum of the abdomen, and they seem to be too long and too membranaceous to support a tambourine, unless very small and basal. In the genus *Schizodactylus* one certainly might have been developed and extended to the whole elytra, these organs

* Principal work referred to for the Gryllacrinæ:—

CH. BRUNNER VON WATTENWYL, 'Monographie der Stenopelmatiden und Gryllacriden,' 1888. (Comp. *anteà*, p. 285.)

being flat and somewhat coriaceous; but as the elytra are curled up together at their extremity, it is impossible for one of them to rub on the other.

The Gryllacrinæ, numerous in the Old World, include but few genera, and they do not seem to be very abundant in Central America.

GRYLLACRIS, Serv.

Gryllacris, Serville, Rev. Méthod. des Orthopt. p. 394 (1831); Brunner v. Wattenwyl. Monogr. der Stenopelm. und Gryllacr. p. 73*.

Synopsis specierum.

a. Eytra testacea vel hyalina:

b. venulis transversis fuscis. Pedes toti vel partim nigri, geniculis testaceis. Femora postica dimidia parte apicali atra. Tibiæ anticæ testaceæ, atro-fasciatæ. Pronotum atrum.—1. *alternans*, Brunn.

bb. venis et venulis omnibus roseis.—2. *salvini*, sp. n.

aa. Elytra testacea vel ferruginea, venis et venulis transversis concoloribus vel pallidioribus. Alæ totæ hyalinæ. Tibiæ anticæ et femora postica corpore concolores vel rufescentes. Tibiæ anticæ et intermediæ subtus spinis utrinque 4 vel 5 armatæ. Ovipositor subrectus.

b. Elytra ampla, longa, quam femora postica duplo longiora. Frons pallida. Ovipositor rectus, compressus, basi teres, quam femora paulo longior.—3. *longipennis*, Pict. & Sss.

bb. Elytra obtusa, quam femora postica longiora. Frons tota nigra vel nigro-fasciata; ocellis flavis. Ovipositor compressus, subrectus, quam femora postica fere sesqui-longior. (Tibiæ posticæ supra margine externo 5–7-, margine interno 4–5-spinuloso.) Vertex infuscatus.

c. Genicula et tibiæ concoloria.

d. Pronotum unicolor vel vittis rufis diffusis ornatum. Spinulæ femorum et tibiarum posticorum tantum apice infuscatæ.—4. *abluta*, Brunn.

dd. Pronotum lineolis fuscis pictum. Spinulæ femorum et tibiarum posticarum totæ nigræ et basi atro-circumdatæ.—5. *picta*, Brunn.

cc. Tibiæ basi nigræ.

d. Ovipositor apice obtusus.—6. *cyclops*, sp. n.

dd. Ovipositor apice acutus.—7. *maculata*, Brunn.

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* In Brunner's synopsis of the species of the genus *Gryllacris* two errors occur in the text (p. 82):—

6, 6. (Species Americanæ, &c.) Instead of "femore postico *duplo longior*" read "*sesqui-longior*," or "*vix sesqui-longior*."

7. (Caput &c.) Instead of "*femore postico sesqui-breviore*" read "*femore postico sesqui-longiore*."

These corrections must also be made in the descriptions of the species, as proved by the measurements given by the author.

1. **Gryllacris alternans,** Brunn.

Gryllacris alternans, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 89. 14.

♂. "Testacea. Caput ab antico visum elongatum, supra (in occipite et vertice) nigrum et fulvo-marmoratum. Fastigium verticis articulo primo antennarum sesqui haud latius, marginibus acutis. Antennæ totæ necnon facies testaceæ. Pronotum nigrum, circumcirca anguste testaceo-marginatum necnon disco testaceo-maculato. Femora antica et intermedia tota testacea, postica pone medium usque ad apicem atra, apice ipso testaceo, subtus utrinque spinulis 6 atris armata. Tibiæ anticæ late atro-fasciatæ, spinis testaceis. Tibiæ intermediæ et posticæ totæ testaceæ. Elytra ampla, subhyalina; venis et venulis infuscatis. Alæ obtuse triangulares, elytris concolores. Abdomen apice infuscatum, segmento dorsali nono ♂ parum producto, cucullato, late sulcato, in marginis inferioris medio spinulis duabus minimis fuscis armato. Lamina subgenitalis valde transversa, minutissime late emarginata; stylis acuminatis."

♂. Long. corp. 21; pronot. 4·5; elytr. 31; femor. post. 13 millim.

♂ *var.* Long. corp. 18; pronot. 4; elytr. 27; femor. post. 10·5 millim.

Hab. Mexico, Puebla.

2. **Gryllacris salvini,** sp. n.

♂. Sat magna. Tota flavo-testacea, pedibus rosescentibus. Caput anterius elongatum. Vertex apice quam primus articulus antennarum sesquilatior, rotundatus, ad frontem detrusus, antice planatus, margine infero utrinque impresso. Maculæ ocellares grandes, luteæ. Pronotum obsoletissime hic illic rosescens. Elytra et alæ tota hyalina, venis omnibus roseis. Elytra ampla, apicem versus leviter dilatata, apice asymetrice acuminato-rotundata, venulis transversis roseis. Vena discoidalis prope basin et ante medium ramum emittens; rami bini trifurcati. Venæ ulnares indivisæ; prima ramulum ad basin rami primi venæ discoidalis emittens. Alæ elytris æquilongæ, quam latæ fere duplo longiores, apice anguste rotundatæ, venulis transversis pallidis; vena ulnaris 4-ramosa, ramo primo longissimo. Tibiæ anticæ et intermediæ subtus utrinque 5-spinosæ, spinis gracilibus, acutis, omnino concoloribus. Femora postica subtus fere a basi spinosa, utrinque spinis 7–8 acutis. Tibiæ posticæ supra utrinque spinis 6. Spinæ omnes pedum posticorum concolores, apice imo nigro. Ultimum segmentum dorsale margine postico sinuato vel inciso, utrinque processum spiniformem teretem emittens, apice gracillime uncinato, nigro. Cerci longiusculi (in nostro individuo inæquales). Lamina infra-genitalis utrinque stylo maximo terete instructa.

Long. corp. 31; pronot. 5·5; elytr. 41·5, latit. 13; femor. post. 16 millim.

Hab. Panama, Bugaba (*Champion*).

This very fine and distinct *Gryllacris* is intermediate between *G. lævigata* and *G. cruenta*, Brunn., from the Upper Amazons. In coloration it nearly approaches *G. cruenta*, which also has the nerves of the elytra rose, but the spines of the feet are not black, as in that species. The anal pieces resemble those of *G. lævigata*, Brunn. (Monogr. der Stenopelm. und Gryllacr. p. 97, t. 8. fig. 41 c), but they have much longer styles, and the venulæ of the elytra are not black. The infra-genital plate is partly destroyed in the only specimen obtained, and its shape cannot be described.

3. **Gryllacris longipennis,** Pict. & Sss.

Gryllacris longipennis, Pict. & Sauss. Bull. Soc. Ent. Suisse, 1891, p. 314. 10, fig. 15 (♀).

♀. Pallide testacea. Vertex sat angustus, apice quam antennarum articulus primus haud duplo latior, marginibus subcarinatis vel rotundatis. Pronotum brunnescens, leviter gibberosum, sulcis sat profundis, supra sulco tenui divisum, hoc ad medium discum impressionem profundiorem efficiens. Lobi laterales marginibus et ad sulcos pallidi. Elytra testacea, grandia, usque ad $\frac{2}{3}$ longitudinem gradatim dilatata, quadrato vel suboblique late reticulata, venulis concoloribus, apice acuminato-rotundata. Alæ amplæ, elytris æque-longæ, hyalinæ, venis testaceis, apice rotundatæ, margine apicali et postico ad unum arcuato.

Tibiæ anticæ utrinque longe 5-spinosæ. Femora postica basi parum fortiter dilatata, in tertia parte apicali linearia, subtus utrinque spinis 8–7 nigris, basi pallidis, armata. Tibiæ posticæ supra spinis 6 : 6 apice nigris instructæ. Lamina infra-genitalis rotundata. Ovipositor gracilis, subrectus, femori longior, compressus, basi leviter teres, apice hebetato-acuminato.

♀. Long. corp. 20; pronot. 4; femor. post. 12·5; elytr. 22; ovipos. 15 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

4. **Gryllacris abluta,** Brunn. (Tab. XV. figg. 4–7.)

Gryllacris abluta, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 119. 88 (♂).

Fulvo-testacea, sat parva. Verticis apex rotundatus, quam primus articulus antennarum fere duplo latior, cum facie fere tota, niger; hæc margine inferiore ad clypeum plus minus testacea. Maculæ ocellares luteæ, invicem valde remotæ, præsertim infera; superiores minores. Pronotum immaculatum. Elytra abdominis longitudine, fulva, ♂ quam femora postica sesqui-longiora. Alæ cycloideæ, subhyalinæ. Femora postica subtus utrinque spinulis 6 : 7 apice nigris, ultimis internis 2 majoribus, armata. Tibiæ anticæ utrinque spinis 4 subæqualibus; posticæ supra utrinque spinis 4–5 apice nigris præditæ.

♀. Lamina infra-genitalis transversa, quadrata, utrinque rotundata, vix incisa. Ovipositor subrectus, elytrorum longitudine, femori $\frac{1}{3}$ longior, apice hebetatus. Abdomen supra apice nigrum, ultimo segmento medio laminaque supra-anali tota, nigris.

♂. Lamina supra-analis (fig. 6) lata, utrinque attenuata, in medio (basi excepta) profunde sulcata (sulco testaceo), apice in spinas 2 longissimas, acutissimas, producta. Lamina infra-genitalis (fig. 7) subplana, subtus subconcava, supra subconvexa, in medio inter stylos parallele producta, apice arcuato-rotundato. Styli cylindrici, obtusi, laminam infra-genitalem vix superantes.

Var. *a.* Tota rufescens.—*b.* Abdomen ♀ apice vix nigrescens.—*c.* Lamina infra-genitalis subsinuata.—*d.* Spinæ laminæ supra-analis styliformes, interdum longissimæ, leviter curvatæ;—*e,* fulvo-testaceæ. Vertex maculis ocellaribus superis minoribus, irregularibus. Pronotum leviter brunneo-varium. Abdomen apice parum nigrescens. Lamina supra-analis in medio nigra, apice luteo-maculata. Lamina infra-genitalis medio angustius producta, apice subangulata. (Guatemala.)—*f.* Pallida, femoribus apice tibiisque basi rubris.

♀. Long. corp. 19; pronot. 5; elytr. 14; femor. post. 11; ovipos. 15 millim.
♀. Long. corp. 18; pronot. 4; elytr. 13; femor. post. 10; ovipos. 15 millim.
♂. Long. corp. 15; pronot. 4; elytr. 13; femor. post. 9 millim.

FIGURES:—Fig. 4, the female insect.—Fig. 5, an elytron of the male.—Fig. 6, the end of the abdomen of the male, from above.—Fig. 7, the same, from beneath.

Hab. MEXICO, Atoyac in Vera Cruz (*Schumann*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA (*Oltramare*), Lanquin in Vera Paz (*Champion*); SALVADOR.

5. **Gryllacris picta,** Brunn. (Tab. XV. fig. 8, ♀.)

Gryllacris picta, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 89.
Gryllacris atricula, Pict. & Sauss. Bull. Soc. Ent. Suisse, 1891, p. 315. 11, fig. 16.

♀. Fulvo-testacea. Vertex et frons nigri, quam antennarum articulus primus duplo latiores; occipite testaceo; maculis ocellaribus flavis, infera maxima, superioribus minoribus, irregularibus. Scutellum faciale punctis 2 brunneis, superius maculis 2 fuscis, per lineam fuscam cum margine fusco scrobicularum antennarum conjunctis. Pronotum maculis in picturas 4 dispositis ornatum, ante medium puncto impresso notatum. Elytra fulvia, brevia, abdomen haud superantia; venis campi discoidalis propinquis, venulis transversis obliquis, campo anali basi fortiter reticulato. Alæ lacteo-hyalinæ, pallide venosæ, apice valde obtusæ, margine costali testaceo. Tibiæ anticæ subtus in utroque margine spinis 4 armatæ. Femora postica brevia ac crassa, subtus spinulis nigris 5 : 6 armata. Tibiæ posticæ supra spinis paucis (3 : 4) nigris, basi atro-circumdatis, instructæ. Abdomen supra dimidia parte apicali nigra, ano cercisque

testaceis. Lamina infra-genitalis quadrata, angulis rotundatis. Ovipositor basi arcuatus, compressus, apice obtusus, femori paulo longior.

♀. Long. corp. 18; pronot. 5; elytr. 14·5; femor. post. 12; ovipos. 13 millim.

♂. Long. corp. 12; pronot. 5; elytr. 15; femor. post. 11 millim.

Hab. Panama, Chiriqui (*Champion*).

Var. *a*. Caput magis nigro pictum, occipite nigro; macula frontali minore; articulo primo antennarum basi et utrinque fusco; abdomen apice vix infuscatum (*picta*, Brunn.).

Hab. Costa Rica.

When we described this species, we had not identified it with *G. picta*, Brunn., owing to an error in the Synopsis, p. 82, as indicated in the footnote, *anteà*, p. 305.

6. **Gryllacris cyclops,** sp. n. (Tab. XV. fig. 9, ♀.)

♀. Minuta, fulvo-testacea. Verticis apex quam antennarum articulus primus vix duplo latius, apice cum facie nigrum; hæc infere testacea. Maculæ ocellares flavæ, grandes, fere æquales, superæ subcontiguæ. Pronotum supra maculis irregularibus brunneis multinotatum. Elytra et alæ brevia, abdominis apicem liberantia. Elytra angustula, subrhomboidalia, apice subrotundata. Alæ hyalinæ. Tibiæ omnes basi breviter nigræ; anticæ subtus spinis utrinque 4 subæqualibus armatæ. Femora postica subtus utrinque spinis 4 fuscis munita. Tibiæ posticæ supra utrinque spinis 4 nigris instructæ; his basi brevissime testaceis. Lamina infra-genitalis transverse quadrata, angulis rotundatis. Ovipositor subrectus, femori postico paulo longior, apice obtusus.

♀. Long. corp. 12; pronot. 3·6; elytr. 9; femor. post. 8·3; ovipos. 10 millim.

Hab. Panama, Chiriqui (*Champion*).

This species has the same coloration as *G. maculata*, Brunn.; but it is smaller, the elytra are not so large, and the ovipositor is obtuse, as in *G. abluta* and *G. picta*, while in *G. maculata* it is described as being pointed.

7. **Gryllacris maculata,** Brunn.

Gryllacris maculata, Brunn. de W. Monogr. der Stenopelm. und Gryllacr. p. 120. 90.

"Differt a *G. picta*, statura paulo majore, tibiis omnibus basi atro-maculatis, maculis ocelliformibus, superioribus in fastigio (apice) verticis sitis, testaceis, majoribus, subcontiguis; pronoto unicolore; ovipositore acuminato. ♀."

♀. Long. corp. 17; pronot. 5; elytr. 12; femor. post. 10; ovipos. 12·5 millim.

Hab. Costa Rica; Panama, Chiriqui.

HYPERBÆNUS, Brunn.

Hyperbænus, Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 123 (1888).

1. **Hyperbænus festæ,** Griff.

Hyperbænus festæ, Griffini, Bollet. di Mus. di Zool. dell. Univ. di Torino, xi. No. 232, p. 31 (1896).

♂. Pilosus, omnino stramineus, concolor. Caput modicum, antice pallidum. Oculi ovato-oblongi. Verticis rostrum primo articulo antennarum parum latius, lutescens. Frontis fastigium macula ovali pallida. Antennæ robustæ, stramineæ. Pronotum breve, disco inæquale, postice perparum productum, rotundato-

truncatum; margine antico obsolete rotundato, canthis rotundatis. Lobi laterales haud perpendiculares, subquadrati, angulis rotundatis. Elytra longa, sat ampla, ovata, apice subrotundata, magna parte etsi campo anali confertim regulariter reticulata. Alæ subhyalinæ, confertim maxima parte quadrato-reticulatæ. Femora antica et intermedia subtus inermia; femora postica elytro dimidio breviora, sat incrassata, in utroque margine spinis 4 apice fuscis armata. Tibiæ anticæ et intermediæ supra fusciores, teretes, subtus spinis 5:5 armatæ. Tibiæ posticæ spina subapicali unica præditæ, supra spinis 6:7. Abdomen modicum, sat nitidum. Segmentum octavum dorsale sat magnum, convexum, postice sulco medio longitudinali sat lato præditum et in hoc sulco apicem versus spinulis duabus nigris inferius vergentibus, in tumescentia quadam sitis, armatum. Segmentum nonum sub octavo fere absconditum, perpendiculariter inflexum, planiusculum, carinulis duabus mediis apicem versus (id est inferius) convergentibus præditum, ibique spinulas duas nigras incurvas, sursum vergentes, gerens. Cerci sat longi, piloselli. Lamina infra-genitalis apice late et sat profunde rotundato-emarginata, lobis triangularibus, apice emarginationis acutiusculo.

♂. Long. corp. 15; pronot. 3; elytr. 26; lat. 8·3; femor. post. 9·5 millim.

Hab. PANAMA, Punta de Sabana, Isthmus of Darien.

NEORTUS, Brunn.

Neortus, Brunner v. Wattenwyl, Monogr. der Stenopelm. und Gryllacr. p. 136 (1888).

[1. **Neortus jamaicensis,** Brunn.

Neortus jamaicensis, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 137, t. 9. fig. 47.

"Statura modica, colore castaneo, segmentis singulis postice fuscioribus. Caput validum. Fastigium verticis rotundatum, articulo primo antennarum duplo latius. Frons lata, rotundata. Femora postica subtus, margine interno mutico, margine externo apice spinulis 2–4 armato. Segmentum abdominale dorsale ♂ octavum haud productum, segmentum nonum planiusculum, latum, truncatum. Cerci brevissimi. Lamina subgenitalis ♂ lata, obtuse triangulariter producta, supra carina transversa, intramarginali, elevata, 4-tuberculata instructa, stylis acuminatis. Ovipositor brevis, validus, rectus, apice ipso incurvus et acute acuminatus. Lamina subgenitalis ♀ transversa, brevissima, tota truncata." ♂ ♀.

Long. corp. 20; pronot. 4·6; femor. post. 7·5; ovipos. 6 millim.

Hab. ANTILLES, Jamaica.]

2. **Neortus carolinensis,** Gerst.

Gryllacris carolinensis, Gerst. Archiv f. Naturg. xxvi. 1, p. 276 (1860).

Neortus carolinensis, Brunn. v. W. Monogr. der Stenopelm. und Gryllacr. p. 137. 2.

"Statura minima, colore ferrugineo-testaceo, segmentis omnibus margine postico fusciore. Fastigium verticis nitidum, rotundatum, articulo primo antennarum sesqui vix latius. Femora postica subtus, margine interno spinulis minimis 2, margine externo spinulis 5 armato. Tibiæ anticæ spinulis quaternis, apicalibus minimis. Segmentum abdominale dorsale ♂ octavum rotundato-productum. Segmentum nonum cucullatum, truncatum. Cerci brevissimi, stylos haud superantes. Lamina subgenitalis ♂ profunde triangulariter emarginata, stylis acuminatis instructa. Ovipositor (secundum Gerstäcker) validus, latus, falcatus, acute acuminatus." ♂ ♀.

♀. Long. corp. 15; ovipos. 9 millim. (*sec.* Gerstäcker).

♂. Long. corp. 13; pronot. 3; femor. post. 7·5 millim.

Hab. NORTH AMERICA, Carolina.—MEXICO.

Tribus PHANEROPTERINÆ *.

Phaneropteridæ, Brunner v. Wattenwyl, Monographie der Phaneroptiden.
Camptoxiphæ, Serville, Hist. Nat. des Orthoptères, p. 399.

Tarsi depressi. Tibiæ anticæ foraminibus instructæ. Tarsorum articulus primus et secundus latere teretes (latere nec sulcati, nec laminatim extensi). Tibiæ posticæ supra utrinque spina apicali, subtus utrinque spinis duabus apicalibus instructæ. (*Brunner.*) †

The Phaneropterinæ constitute a special type of Locustidæ. They have the elytra more or less coriaceous, occupying a particular position, being placed when at rest on either side of the body in a somewhat perpendicular plane, uniting together on the back by their inner (sutural) margin, in the form of an acutely angled roof. This position is due to the discoidal field being here fused in a single plane with the marginal field, and thus becoming lateral, contrary to what obtains in the Gryllidæ, where the discoidal field fused with the anal field has become dorsal. Thus in the Phaneropterinæ the anal field alone remains dorsal; but it is much reduced, making, when the elytra are at rest, a small basal field of lanceolate form.

The elytra overlap in their small dorsal field only, and, in contradistinction to what happens in the Gryllidæ, it is the left elytron which covers the right one, this being the natural position of the elytra in Locustidæ. The lateral and the dorsal fields are separated nearly at a right angle by an acute ridge, which is formed by the posterior (second) ulnar vein, this vein being continued all along the sutural margin of the elytron.

* Principal works referred to for this tribe:—

S. Scudder, Materials for a Monograph of the North-American Orthoptera (Boston, Journ. of Nat. Hist. vii. no. 3). Cambridge, 1862.

C. Stål, Observations orthoptérologiques, pars 2 (Bihang till k. Svenska Vet.-Akad. Handlingar, Band iv. no. 5). Stockholm, 1876.

C. Brunner v. Wattenwyl, Monographie der Phaneroptiden (Wien, 1878). This is a very complete treatise of the tribe and a classic work, which has really established the knowledge of Phaneropterinæ, and which we could follow without any change in the classification.

Id. Additamenta zur Monographie der Phaneropteriden (Wien, 1891, br. 8vo).

† *Nomenclature.*—Brunner v. Wattenwyl designates under the term *fastigium verticis* the anterior apex of the vertex between the antennæ. This part we have always named *rostrum verticis*, principally when it is narrow, but we retain the terms used by Brunner v. Wattenwyl when we reproduce any of his diagnoses.

The same author has adopted the nomenclature of Stål for the elytra, giving the name *venæ radiales* to the three nervures we designate by the terms *vena humeralis*, *v. discoidalis*, and *v. media*. We have no reason to change our nomenclature adopted from the beginning and which applies to all the families of Orthoptera. It must be noticed that in the Phaneropterinæ these three veins are fused together at the base, especially the *vena media*, which issues from the middle of the discoidal vein as if it was a posterior branch of that vein. In Stål's nomenclature this vein corresponds to the *vena radialis posterior*. Brunner v. Wattenwyl calls it *ramus posterior venæ radialis*. We call it *vena media* so as to respect the homologies in the nomenclature.

The nervures of the elytra are very simple and similar in both sexes. The *vena mediastina* is very short and often effaced. The *venæ humeralis* and *discoidalis* are contiguous, at least in their proximal part, slightly divergent in their distal part. The discoidal vein, somewhat arcuated and subsigmoidal, is the principal one; it divides the elytron longitudinally into two fields. The *vena media* is fused at the base with the discoidal vein, and escapes about the middle, and is most frequently furcate. The anterior *vena ulnaris* is straight, terminating on the sutural margin. The dorsal field is coriaceous, punctured, or reticulated. This field, being the musical part of the elytron, requires special attention.

The typical dorsal field must be described from the females, it being unmodified in this sex. It presents three veins: the *anal vein*, longitudinal and parallel to the ridge, and two *axillary veins*, very feeble and frequently effaced. The *second axillary vein*, starting from near the extreme base of the anal vein, is at first transverse, then breaks at an obtuse angle to become longitudinal, more or less parallel to the sutural margin of the dorsal field, and runs to near the end of the field to fuse with the end of the anal vein. The *first axillary vein* is contiguous at the base with the anal vein; it diverges from this in its middle to become obliquely longitudinal, and anastomoses at its extremity with the *second axillary vein*, delineating with this vein an elongated triangle. In the females the dorsal field is generally very similar in both elytra and coriaceous, except that the right elytron presents often along the sutural margin a more or less wide membranaceous hyaline band longitudinally divided by the second axillary vein. In the larger species (principally in the Steirodontites) this band is strongly reticulated by transverse venules. We do not consider, however, that this membranaceous part is to be regarded as a sort of stridulating tambourine; probably it has lost its coriaceous nature through being covered and protected by the left elytron when at rest. Nevertheless, it should be mentioned that in the large species the second axillary vein, which divides or limits the membranaceous area, as well as the transverse venulæ impinging upon it, are very thick and prominent, as if modified for a special purpose.

Musical organ.—The males of the Phaneropterinæ are all musicians, except those with rudimentary elytra; but as the musical organ is confined to the small dorsal (anal) field it is much less developed than in the Gryllidæ, and is far from furnishing such clear characters for classification as in that family. On the contrary, it is very similarly formed in all the genera of this group, and varies principally in having the nervures more or less fused in the coriaceous reticulation of the dorsal field.

The modifications of the latter to form the tympanum are somewhat analogous to what I have described in the Gryllidæ, but the tympanal field being very narrow, the stridulating vein cannot be formed by the *anal* vein; it is the first axillary vein which is here transformed for that purpose. There are only two axillary veins, both much thickened and deflexed, but not in the same way on both elytra, the tambourine of the

left elytron being differently formed from that of the right elytron, whereas in the Gryllidæ the two tambourines are similar. Indeed, the two elytra are not alike in structure, this being due to the left elytron covering the right one in repose, and to their having different functions.

The neuration of the males is as follows:—

1st. In both elytra the *anal vein* is unmodified, straight as in the females.

2nd. *Left elytron.*—The *first axillary vein* is nearly straight, as in the females; but it emerges from the anal vein earlier than in that sex, and emits an inner branch, the latter being broken at a right angle, becoming quite transverse, and very much thickened, swollen above, and bordered posteriorly by a deep furrow. This transverse tumid nervure is the *stridulating vein*. Beneath it is very prominent, longitudinally sulcate, and transversely strigose, to produce the stridulation by rubbing like a file upon the right elytron. This enormous transverse vein is the fiddle-bow of the musical apparatus.

The first axillary vein, after having furnished the stridulating vein, continues backwards in a longitudinal direction, and is very fine, as in the female, its post-axillary part appearing thus to be a special vein (which may be called the *first post-axillary vein*).

The second axillary vein originates near the anal vein; it is at first strongly transverse and prominent, but becomes oblique to anastomose close to the sutural margin with the inner end of the stridulating vein, enclosing with this a convex, piriform, coriaceous, punctured area, which is certainly sonorous *. It is thickened to support the stridulating vein, and is frequently divided into two parallel branches. The angle by which the second axillary vein joins the stridulating vein might be compared to the *anal knot* of the tambourine of the males of the Gryllidæ †.

The *second axillary vein*, after having joined the end of the *vena stridulans*, runs back outwards, and becomes transverse, parallel to the stridulating vein, and only separated from it by the transverse sulcus, and anastomoses at a right angle with the straight external branch of the first axillary vein. The second transverse vein, thus formed, is generally stout and thickened, but not so much as the stridulating vein; from above it appears as a second stridulating vein, but it is not prominent beneath and serves only as a strong support for the stridulating vein. Frequently it is not distinct, but fused with the latter; in consequence, the left dorsal field shows either one or two transverse veins.—The second transverse vein sends from its middle backwards a thin longitudinal nervure (2^a *vena post-axillaris* ‡), which joins in

* The two axillary veins are here disposed very much as in the male Gryllidæ (comp. Tab. XIII. fig. 22, x, x').

† The two axillary veins modified and anastomosed form together what Brunner v. Wattenwyl terms the *vena plicata*. This expression, although not based on homologies, is often very convenient for the diagnoses of species.

‡ This vein is the posterior, unmodified and fine end of the second axillary vein, and is less prolonged than in the females. It looks like a branch of the second transverse vein or of the stridulating vein; but, in reality, it is the second transverse vein which is formed by a branch of the second axillary vein.

an acute angle the end of the first post-axillary vein, forming with it an elongated triangle, homologous with the angle formed posteriorly by the two axillary veins, in the females, but not so much prolonged.

This triangle is useless for the production of sounds; it is only a homologue of the normal veins of the female elytron; it may be called the *post-axillary triangle*, its margins being formed by the two *post-axillary veins* *.

We have thus shown that the males of the Phaneropterinæ have in the left elytron a very powerful stridulating-organ, this being strongly coriaceous and supported by the whole dorsal field.

3rd. *Right elytron.*—The veins are not so strongly deflexed as in the left elytron. The *first axillary vein* is well separated from its base from the anal vein, and longitudinal, as in the females, but frequently flexuous and much stronger; it emits an obliquely transverse stout branch, sometimes greatly thickened at the base. This nervure is the homologue of the stridulating vein of the left elytron, but it is often divided into two parallel branches, imitating the two transverse veins of the latter. Beneath, the first axillary vein is not very prominent, showing that it is not a fiddle-bow, as in the left elytron. Behind this transverse vein we find the *post-axillary triangle*, as in the left elytron, but bordered with strong veins.—The *second axillary vein* is at the base obliquely transverse (in the rest of the elytron appearing quite transverse, parallel to the hind margin of the pronotum), and then becomes longitudinal and divides into two parallel branches, which are much thickened and prominent and submarginal to the sutural border, terminating in a sort of notch in the latter. The two thick branches serve to consolidate the corneous margin, which forms the sonorous area (*illex*, comp. *anteà*, p. 218) on which the stridulating vein of the left elytron rubs to produce the tunes, and they must be considered as the two strings of the fiddle.

The post-axillary triangle is similar to that of the left elytron, but not quite symmetrical with it; its inner margin is formed by the second portion of the second axillary vein, this being much thickened, broken off, and quite separated from the first portion †.

The tympanal field of the right elytron is thus divided into several compartments:—1. At the base, the large axillary cell, generally convex, coriaceous and punctured, as in the left elytron. 2. Outside, the elongate ano-axillary cell, partly membranaceous and hyaline (*outer speculum*), except at the base. 3. The triangular (post-axillary) area, also membranaceous (*inner speculum*). The second and third cells form the tambourine of the elytron.

At the posterior extremity of the triangle the veins become greatly reticulated,

* Homologous with the first two post-axillary veins of Gryllidæ. (Comp. *anteà*, p. 217.)

† This anomaly is due to adaptation. The first part of the second axillary vein has become independent to form the marginal strings, next to the *illex*, and thus the post-axillary triangle is separated from it.

enclosing small hyaline cells. The remaining parts of the dorsal field, *i. e.* the apex, inner and outer margins, are more or less coriaceous and green in colour *.

The conclusion to be drawn from this analysis is that the left elytron is the fiddle-bow of the musical instrument, and that the right elytron is the tambourine which produces the sounds.

The musical instrument is here very simple as compared with that of the Gryllidæ, and, on account of its rougher surface, must certainly produce less varied and less musical sounds.

Hind wings.—These present at the base of the posterior field two strong transverse veins fusing together in an acute angle. The anterior vein is somewhat oblique; the posterior one is transverse and formed by the heads of the radiate nervures of the hind field anastomosed together into a chitinous arch, which forms a support for them.

This sort of vein, in the shape of a **V**, might be termed, following Brunner v. Wattenwyl, the *vena plicata*; but it is not homologous with his *vena plicata* of the tympanum of the male elytra (comp. *anteà*, p. 312, note †), for it has not the same position, and, besides, its angle is turned in a contrary direction (the angle outside, instead of inside), and, in addition, it is found in both sexes. Moreover, such a *vena plicata* exists also at the extreme base of the elytra, near their articulation; but it is very small and not always evident, its separate parts being frequently disunited.

The Phaneropterinæ live mostly in bushes and on trees. They are all mimetic insects, their oblong, ovate, or lanceolate elytra, placed in a perpendicular plane, exactly imitating leaves. Most of them are green in colour; others are variable in this respect, green or brownish, imitating living and dead leaves, perhaps according to the season. They fly very readily. In all the known Central-American genera (except *Dichopetala*, ♀) the elytra and wings are completely developed.

* The appearance of the musical field as we have described it is rarely evident, the whole of the veins being seldom developed in a normal manner. They are frequently fused together by becoming thickened or interrupted for the purpose of forming the tympana.—In the left elytron, the second axillary vein, instead of joining the inner end of the stridulating vein, is often interrupted at its angle, so that the second transverse vein seems to be independent. In both elytra, too, the normal venulation is often considerably modified by the extension of the coriaceous reticulation of the dorsal field. In the right elytron the tambourine when invaded by such reticulation is no longer apparent and is reduced to a less musical instrument. What we have endeavoured to do is to describe the theoretic typical structure of the musical field, based on its homologies independently of the various appearances which it may present.

Group **ODONTURITES.**

Odonturæ, Brunner v. Wattenwyl, Monogr. der Phaneropt. p. 33.

DICHOPETALA, Brunn.

Dichopetala, Brunner v. W. Monogr. der Phaneropt. p. 76.

The two known species of this genus are both American.

1. **Dichopetala mexicana**, Brunn.

Dichopetala mexicana, Brunn. v. W. Monogr. der Phaneropt. p. 77. 1 (♂ ♀), t. 1. fig. 6 (♂).

Hab. Mexico, Cuernavaca.

Unknown to us.

[2. **Dichopetala emarginata**, Brunn.

Dichopetala emarginata, Brunn. v. W. Monogr. der Phaneropt. p. 77. 2.

Hab. North America, Texas (*Boll, in Mus. Genavense*).]

Group **ÆGIMIITES.**

Ægimiæ, Brunner v. Wattenwyl, Monogr. der Phaneropt. p. 144.

ÆGIMIA, Stål.

Ægimia, Stål, Recens. Orthopt. ii. p. 20 (1874) ; Brunn. v. W. Monogr. der Phaneropt. p. 145.

One species only is known of this genus.

1. **Ægimia cultrifera**, Stål.

Ægimia cultrifera, Stål, Recens. Orthopt. 2, p. 46 (1874) ; Brunn. v. W. Monogr. der Phaneropt. p. 145. 1, t. 3. fig. 36.

Hab. Mexico, Cordova (*Mus. Holm.*).

Unknown to us.

Group **APHIDNIITES.**

Aphidniæ, Brunner v. Wattenwyl, Monogr. der Phaneropt. p. 146.

APHIDNIA, Stål.

Aphidnia, Stål, Recens. Orthopt. 2, p. 13 (1874) ; Brunner v. W. Monogr. der Phaneropt. p. 151.

Synopsis specierum.

a. Spina verticis apice acuminata, recta; frons rufo-fusca. Vena principalis elytri nigro-punctata. —1. *fuscifrons*, Brunn.

aa. Spina verticis obtusa, pyramidalis.

b. Femora postica extus dentibus lamellaribus trigonalibus armata.—2. *simplicipes*, Brunn.

bb. Femora postica extus lobo latissimo unico instructa.—[3. *alipes*, Westw. (Colombia).]

1. **Aphidnia fuscifrons**, Brunn.

? *Locusta sellata*, Stoll, Sauterelles, tab. iv[a]. fig. 10.

Phaneroptera alipes, Westw. Arcana Ent. ii. p. 87, t. 70. figg. 1, 1 *d* (♀) (1884) (nec ♂).

Aphidnia fuscifrons, Brunn. v. W. Monogr. der Phaneropt. p. 153. 2.

Albo-virescens, thalassina, in desiccatis tota vel partim fulvescens. Antennæ irregulariter nigro-annulatæ. Verticis processus trigonalis, apice mucronatus, ante mucronem frequenter bidentulus, subtus niger. Pronotum valde sellæformiter excavatum, retro altum, margine postico arcuato, utrinque ad angulos compresso, in medio compresso-tuberculato; lobis lateralibus grandibus, ad exteriorem inflexis, rotundato-sublobatis. Elytra et alæ thalassinæ, apice margine suturali valde trapezino-dilatato; in margine suturali maculis nigris transversis, ad venam principalem maculis minoribus, necnon ante ampliationem fascia obliqua transversa irregulari, nigris; venis principalibus fusco-punctulatis, necnon margine costali punctis nigris notato, parte apicali elytri leviter granulosa. Alæ apice linea obliqua nigra. Os, pectus et coxæ nigræ. Pedes nigro-fasciati. Coxæ anticæ superne anterius sub pronoti lobis spina secunda magna armatæ; necnon postice in processum deplanatum horizontale, bilobatum, pronotum sustinente dilatatæ. Femora antica dimidia parte basali rufa, supra et subtus leviter lobata; tibiis ante medium vitta, et apice, nigris. Femora intermedia vitta media nigra, subtus margine antico apice dentibus 3 lamellaribus trigonalibus armata; tibiæ vitta media et apice nigris, basi utrinque supra in dentes trigonales 3 dilatatæ, subtus spinulis nigris armatæ. Femora postica vitta nigra ultra medium, basi et macula dorsali, nigris; apice subtus utrinque lobo magno 2–3-crenato, subtus nigro, instructa, marginibusque utrinque dentibus 3, quarum 1 vel 2 ultimi marginis interni trigonales. Tibiæ posticæ supra utrinque fascis 3–4 nigris, supra utrinque lobis inæqualiter fasciculatis, apice mucronatis, instructæ. Tarsi omnes nigri, ultimo articulo basi supra luteo.

♀. Ovipositor basi subtus nigro-maculatus, disco scabro, marginibus tenuissime crenulatis, valvis superioribus apicem versus subdilatatis, inferiores haud superantibus.

♂. Lamina supra-analis transversa. Cerci breves, crassi, subdeplanati, apice truncato, nigro, sinuato. Lamina infra-genitalis basi nigra, profunde sulcata, dehinc longissime divisa, lyrata, scilicet in lobos 2 longissimos lamellares, tæniiformes, ad exteriorem arcuatos excurrens; ejus rami apice rotundati, stylos ovatos membranaceos lobiformes gerentes.

♀. Long. corp. 19·5; pronot. 5; elytr. 25·5; femor. post. 11·5; ovipos. 5·8 millim.

♂. Long. corp. 17·5; pronot. 5; elytr. 29; femor. post. 12·6 millim.

Hab. MEXICO (*Mus. Oxon.*), Jalapa (*M. Trujillo*: ♂), Orizaba (*Saussure*); PANAMA, Bugaba (*Champion*: ♀).

2. **Aphidnia simplicipes**, Brunn.

Aphidnia simplicipes, Brunn. v. W. Monogr. der Phaneropt. p. 157. 7 (♀ ♂).

Lutea, nigro-maculosa. Vertex tuberculo pyramidali obtuso instructus; rostrum subcompressum, sulcatum, cum fronte subcontiguum. Frontis scutellum transversum, brevissimum; margine supero recto; processu dentiformi. Occiput, vitta longitudinali cranii, vitta transversa supra marginem frontis in apice processus frontalis transducta, atra. Antennarum apex articulorum subnodosus, niger; primo articulo subtus et extus nigro. Pronotum fusco-punctatum et nigro-maculatum; metazona postice plana,

rotundata, subemarginata. Margo anterior punctis nigris 3, discus macula Y-formi, margo posterior maculis 2 contiguis, anguli humerales macula arcuata, nigris. Lobi laterales rotundati, supra maculis 2 nigris. Elytra apice haud dilatata, oblique truncata, omnino maculis angulosis nigris conspersa. Alæ apice nigro-guttatæ. Pedes nigro-picti. Femora antica nigro-maculata; intermedia vitta nigra; postica vittis 2 interruptis, 2 completis et apice nigris. Femora subtus dentibus trigonalibus, anterioribus 1, intermediis 2, posticis 5 (his acutissimis), armata. Tibiæ apice nigræ, anticæ et intermediæ insuper fascia unica, posticæ fasciis 3 nigris; anticæ tympanis nigris. Tarsi nigri, supra luteo-maculati.

♂. Segmentum anale supra utrinque angulatum, margine inter angulos deflexo, obtusangulo, apice sulcato. Cerci longissimi, graciles, subcompressi, in medio rectangulatim incurvi, parte terminali recta gracillima acutissima, nigra. Lamina infra-genitalis postice attenuata, valde impressa, angulatim incisa; stylis minutis teretibus instructa. Campus tympanalis venosus, læviusculus, sulco stridulente in tertia parte basali perspicuo, transverse arcuato; vena axillari baseos transverse acuta, prominula, dehinc longitudinali. Elytrum sinistrum tuberculum transversum nitidum nigrum, in sulco stridulante præbens.

♂. Long. corp. 15; pronot. 4·5; elytr. 26; femor. post. 14·5 millim.

Hab. Mexico (*Mus. Genavense*).

[3. **Aphidnia alipes,** Westw.

Phaneroptera alipes, Westw. Arcana Ent. ii. p. 87, t. 70. figg. 1, 1*a–c* (♂) (nec ♀).
Aphidnia alipes, Brunn. v. W. Monogr. der Phaneropt. p. 156 (♂).

Hab. Colombia (*Mus. Oxon.; Mus. Genavense*).]

Group **HORMILIITES.**

Hormiliæ, Brunner v. Wattenwyl, Monogr. der Phaneropt. p. 229.

HORMILIA, Stål.

Hormilia, Stål, Öfv. Vet.-Ak. Förh. xxx. p. 41 (1873); Recens. Orthopt. 2, p. 13; Brunn. v. W. Monogr. der Phaneropt. p. 230, and Additamenta, p. 116.

Elytra et alæ angustissima. Elytrorum campus tympanalis minutus; tympanum rite explicatum, area postaxillari brevi, speculo dextri elytri parum translucido. Alarum vena ulnaris ultra medium ramos completos 2–3 emittens.

The spines of the hind femora are variable in number in the species of this genus, and must not be taken as a certain character.

Synopsis specierum *.

a. Pronoti discus canthis acutis marginatus. Femora 1^{m}–2^{m} supra apice compressa et acuminata.
  b. Pronoti discus ante medium distincte constrictus. Elytra abdomen superantia. Tibiæ anticæ infra foramina subito angustatæ. Femora 1^{m}–2^{m} subtus bispinosa (vel inermia).
  c. Pronoti lobi laterales longiores quam altiores, margine infero modice arcuato. Elytra apicem versus haud dilatata, apice rotundata; vena media biramosa. Femora antica apice longiuscule carinata, angulo producto. Rostrum verticis apice anterius trigonale.

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* In the synopsis of genera given by Brunner v. Wattenwyl (*Additamenta*, p. 16, line 16), instead of "*lobis deflexis rotundato-insertis*," read "*lobis deflexis angulatim-insertis*," and line 19, add: "*lobis deflexis rotundato-deflexis*" (gen. *Arethæa*).

d. Femora antica subtus spinulis 3–4 armata.—1. *gracillima,* Brunn.

dd. Femora antica subtus dentibus 2 trigonalibus armata.—2. *phthisica,* sp. n.

cc. Pronoti lobi laterales æque alti ac longi, margine infero valde arcuato. Elytra apice oblique truncata, vena discoidalis simpliciter furcata. Femora antica apice brevissime carinata, angulo parum acuto. Rostrum verticis apice anterius rotundatum vel quadratum.

d. Pronoti margo posterior in medio leviter sinuatus. Elytra minus lata quam pronoti longitudo, apicem versus parum dilatata.

e. Elytra femora postica superantia.—3. *tolteca,* Sss.

ee. Elytra a femoribus posticis superata.—4. *intermedia,* Brunn.

dd. Pronoti margo posterior arcuatus. Elytra latiora quam pronoti longitudo, femora superantia.—5. *prasina,* sp. n.

bb. Pronoti discus anterius vix constrictus. Elytra abdomen haud superantia. Tibiæ anticæ infra foramina sensim angustata.—6. *abbreviata,* Brunn.

aa. Pronoti canthi laterales haud acuti.

b. Elytra sesqui-latiora quam pronoti longitudo. Vena media elytri furcata, ante apicem evanescens.—7. *latipennis,* Brunn.

bb. Elytra minus lata quam pronoti longitudo. Vena media elytri furcata, in marginem suturalem excurrens.—8. *bolivari,* Griff.

1. **Hormilia gracillima,** Brunn.

Hormilia gracillima, Brunn. v. W. Monogr. der Phaneropt. p. 231. 1, t. 5. fig. 70.

Elytra longa, apicem versus haud dilatata, potius angustata, apice rotundata; vena media biramosa. Femora antica 2–4-spinulosa, apice mucronata.

Hab. MEXICO, Durango or Sinaloa (*Forrer*), Cordova, Orizaba (*Saussure*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA (*Mus. Genavense*); PANAMA, Volcan de Chiriqui (*Champion*).

2. **Hormilia phthisica,** sp. n.

♂. Grisea, nigro-maculosa et punctata. Rostrum verticis angustissimum, parallelum, sulcatum, apice *anterius* trigonali-truncatum, scilicet supra fastigium frontis trigonum minutum formans, superne acutum, infere truncatum. Processus frontis angustus, longiusculus, anguste trigonale; ocello frontali magno, elliptico. Oculi valde elliptici. Antennæ crassiusculæ, luteæ, annulis nigris brevissimis, valde remotis ornatæ. Pronotum disco ante medium anguste constrictum, canthis acutissimis, margine postico subobtusangulo, in medio minute subinciso. Lobi laterales longiores quam altiores, quam in *H. gracillima* minus alti, postice quam antice fere minus alti, ac margine infero toto, sed quam in specie laudata minus, arcuato; angulo antico rotundato; marginibus nigro-punctatis. Elytra longissima, angustissima, parallela, apice rotundato, nigro-conspersa, ante apicem macula magna nigra. Vena media biramosa. Alæ longissimæ elytra valde superantes; vena ulnari biramosa. Pedes longissimi, fusco-irrorati. Femora antica et intermedia tota carinata, supra apice valde compressa in dentem producta, subtus margine antico bidentato; lobis genicularibus productis, subacutis, subtus minute dentatis. Femora postica gracillima, subtus inermia, lobis genicularibus longis. Tibiæ omnes luteæ, basi infuscatæ; tibiæ anticæ gracillimæ, excepto ad basin. Cerci crassi, teretes, apice gracili, subuncinato. Lamina infra-genitalis bicarinata, in medio truncata, stylis minimis.

♂ Long. corp. 16·5; pronot. 3·8; elytr. 27·5; alar. 33; femor. post. 24·5 millim.

Hab. MEXICO, Temax in Northern Yucatan (*Gaumer*).

Closely allied to *H. gracillima*, but differing from it in having the lobes of the pronotum less elevated, and the anterior femora with two spines only beneath, these being much larger than in *H. gracillima*, which bears three or four very small spines.

3. **Hormilia tolteca,** Ṣauss. (Tab. XV. figg. 10–13.)

Phylloptera tolteca, Sauss. Rev. et Mag. Zool. (2) xi. p. 203 (♀) (1859).
Hormilia tolteca, Stål, Recens. Orthopt. 2, p. 28; Brunn. v. W. Monogr. der Phaneropt. p. 232. 2.

H. intermediæ simillima; elytris longioribus, femora postica superantibus. Grisea, fusco-punctata et maculosa. Verticis rostrum basi subconstrictum, apice *anterius* crassiusculum, convexum, elongato-quadratum, cum frontis fastigium sinuato-conjunctum. Pronotum disco ante medium constricto, canthis acutissimis, margine postico utrinque arcuato, in medio leviter sinuato. Lobi laterales altiores quam latiores, margine infero postice rotundato, antice oblique truncato, ascendente, angulo antico obtuso, rotundato; marginibus nigro-punctatis. Elytra sat longa, angustissima, parallela, apice nonnunquam subdilatata, oblique truncata; vena media furcata. Alæ elytra minus longe superantia quam in præcedente, apice spurcatæ vel hyalinæ; vena ulnari biramosa. Femora antica et intermedia superne tota carinata, in dentem nullum terminata, lobis genicularibus productis, subacutis; margine antico subtus dentibus 2 armato. Tibiæ luteæ, fusco-irroratæ. Femora postica minus gracilia, subtus extus spinulis 4–5 remotis, intus 1–2, armata. Abdomen ut solitum macula magna nigra.

♂. Cerci crassi, breves, truncati, apice intus submucronati.

♀. Long. corp. 16·5; pronot. 3·6; elytr. 21·7; alar. 23; femor. post. 18·5; ovipos. 4·2 millim.

♂. Long. corp. 15; pronot. 3·6; elytr. 23; alar. 25·5; femor. post. 17 millim.

Figures.—Fig. 10, the female insect.—Fig. 11, the end of the abdomen, ♀.—Fig. 12, the head and pronotum, from above, ♀.—Fig. 13, an anterior leg (anterior side), ♀.

Hab. Mexico (*Mus. Holm.*), Cordova (*Saussure, Hughes*), Atoyac in Vera Cruz (*Schumann*), Orizaba (*M Trujillo*), Teapa in Tabasco (*H. H. Smith*); Guatemala, Las Mercedes and Torola (*Champion*); Costa Rica, San José (*Biolley*); Panama, Volcan de Chiriqui (*Champion*).

4. **Hormilia intermedia,** Brunn.

Hormilia intermedia, Brunn. v. W. Monogr. der Phaneropt. p. 232. 3.

Elytra femoris postici apicem haud attingentia, apicem versus dilatata; vena media furcata; femoribus anticis apice haud mucronatis; omnibus subtus inermibus vel spinulis 2–3 armatis.
Var. Elytra longiora, apicem femorum posticorum fere attingentia.—[Guatemala.]

Hab. Mexico, Orizaba (*Saussure*); Guatemala (*Mus. Genavense*), Capetillo, San Gerónimo (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica, Caché (*Rogers*).

5. **Hormilia prasina,** sp. n. (Tab. XV. fig. 14, ♂.)

Major, tota prasina. Antennæ subtus fuscæ. Pronotum anterius valde constrictum, disco postice lato, antice valde angusto, canthis valde acutis, valde convergentibus, anterius fortiter ad exteriorem decurvis; margine posteriore arcuato, haud inciso; lobis lateralibus æque longis ac altis, rotundatis, sinu humerali profundo. Elytra pro genere latissima, apice breviter dilatata, oblique truncata; vena media furcata. Alæ in requiete longe prominulæ, apice subacutæ, hyalinæ, apice leviter virescentes; vena ulnari biramosa. Femora 1^{m}–2^{m} supra tantum apice brevissime carinata, in dentem trigonalem terminata, margine inferiore

3-dentato. Femora postica subtus margine interno spinulosa. Tibiæ anticæ ultra foramina subito angustatæ. Cerci ad apicem attenuati, apice dente armati. Ovipositor tantum apice crenulatus.

♀. Long. corp. 20; pronot. 5; elytr. 30, latit. 6; femor. post. 24; ovipos. 5·2 millim.

♂. Long. corp. 16; pronot. 4·5; elytr. 29, latit. 5; femor. post. 22 millim.

Hab. MEXICO, Mazatlan in Sinaloa (*Forrer*), Guerrero (*H. H. Smith*).

6. **Hormilia abbreviata,** Brunn.

Hormilia abbreviata, Brunn. v. W. Monogr. der Phaneropt. p. 233. 4.

Elytra abbreviata, abdominis longitudine. Pronoti carinæ vix arcuatæ.

Hab. MEXICO, Cuernavaca.

7. **Hormilia latipennis,** Brunn.

Hormilia latipennis, Brunn. v. W. Additam. zur Monogr. der Phaneropt. p. 117. 7 (1891).

Pronoti canthi laterales haud acuti; lobi laterales altiores quam latiores. Elytra longa ac lata.

Hab. COSTA RICA; PANAMA, Chiriqui.

8. **Hormilia bolivari,** Griff.

Hormilia bolivari, Griffini, Bollet. dei Mus. di Zool. di Torino, no. 232, p. 13 (1896).

♂. Fusca, testaceo-conspersa, fusco- et testaceo-variegata. Antennæ graciles, setaceæ, fusco luteoque annulatæ. Facies luteo-variegata, sub oculos obsolete carinata. Rostrum verticis cum fastigio frontis subrotundato-contiguum. Pronotum disco plano, ante medium rotundato-constrictum; margine antico recto, postico rotundato, in medio subsinuato; canthis lateralibus rotundatis, pallidis; disco testaceo, postice maculis 2 et antice maculis parvis 2 fuscis ornato. Lobi laterales infuscati, fusco-conspersi, superne vitta longitudinali fusca; marginibus fusco-tessellati. Elytra angusta, fusco-marmorata, apice obtuso. Vena media in medio oriens, ante medium furcata, in marginem posticum elytri exeuns; vena ulnaris post ortum venæ mediæ obtuse angulata. Alæ elytris longiores, apice fusco-conspersa. Pedes fusco-marmorati et annulati. Tibiæ posticæ femoribus longiores. Lobi geniculares femorum omnium utrinque in spinam acutam producti. Femora anteriora margine antico spinulis 2 : 4, posteriora subtus in medio utrinque spinulis nigris 2. Tibiæ anticæ supra 1 : 4- vel 2 : 5-spinulosæ. Tarsi omnes fusci. Abdomen castaneum, segmentis supra apice in spinam acutam nigram excurrentes; segmentis 2, 3 supra macula lata velutina, fusco-nigra. Lamina supra-analis parva, rotundato-acuminata, subsulcata. Lamina infragenitalis triangularis, acuminata. Ovipositor pronoto paulo longior, marginibus apice subtilissime serrulatis, valvis superioribus apice fere spiniformibus.

Long. corp. 22; pronot. 4; elytr. 26·5, latit. 3·5; femor. post. 21·5 millim.

Hab. PANAMA, Colon.

This species seems to be closely allied to *H. peruviana*, Brunn.

[ARETHÆA, Stål.

Arethæa, Stål, Sv. Vet.-Ak. Handl. iv. no. 5, p. 55 (1876); Brunner v. W. Monogr. der Phaneropt. p. 234.

1. **Arethæa gracilipes,** Thomas.

Ephippithyta gracilipes, Thomas, List and description of new Species of Orthopt. (Rep. U.S. Geol. and Geogr. Surv. Territ. iv.) p. 268 (1872).

Arethæa gracilipes, Stål, Sv. Vet.-Ak. Handl. iv. no. 5, p. 55; Brunn. v. W. Monogr. der Phaneropt. p. 235. 1, t. 5. fig. 71.

Hab. North America, Texas, Arizona.

2. **Arethæa constricta,** Brunn.

Arethæa constricta, Brunn. v. W. Monogr. der Phaneropt. p. 236. 3.

Hab. North America, Texas.]

Group **PLAGIOPLEURITES.**

Plagiopleuræ, Brunner v. Wattenwyl, Monogr. der Phaneropt. p. 247.

Two new genera being now added to this group it is necessary to give a fresh synopsis of the whole of them.

Synopsis generum.

1. Elytrorum venæ humeralis et discoidalis plus minus disjunctæ; vena media in marginem posticum exeuns.
   2. Tibiæ anticæ supra inermes. Pronotum lævigatum. Lamina infra-genitalis ♂ brevis, incisa.—*Amaura,* Brunn.

2, 2. Tibiæ anticæ supra, infra tympanorum ampliatione, spinula minuta armatæ. Pronotum opacum vel corrugatum. Lamina infra-genitalis ♂ longior, attenuata, fissa. ♀. Ovipositor apice rotundatus.—*Ceraia,* Brunn.

1, 1. Elytrorum venæ humeralis et discoidalis contiguæ, tantum apice disjunctæ.
   2. Vena media elytri haud deflexa in apicem elytri exeuns. Ovipositor valde incurvus.
      3. Ovipositor subito incurvus, acuminatus, marginibus totis crenulatis.
         4. Vertex antice carinato-marginatus, apice angulato-deflexus. Vena media elytri non furcata, cum vena ulnari per venulam obliquam conjuncta.—*Ectemna,* Brunn.

      4, 4. Vertex antice obtusus, apice horizontalis. Vena media elytrorum furcata, vel sicut in gen. *Ectemna* cum vena ulnari conjuncta.—[*Plagiopleura,* Stål.]

   3, 3. Ovipositor valde arcuatus, apice rotundatus, subtus apice, supra fere tota longitudine crenulatus. Vena media haud furcata, a vena ulnari libera.—*Godmanella,* gen. nov.

2, 2. Vena media elytri furcata ad marginem posticum deflexa.
   3. Rostrum verticis cum fastigio frontis haud contiguum. Lamina infra-genitalis ♂ longissime furcata, stylis grandibus instructa.—*Chloroscirtus,* gen. nov.

   3, 3. Rostrum verticis cum fastigio frontis contiguum. Lamina infra-genitalis ♂ ampla, stylis instructa.—[*Parableta,* Brunn.]

AMAURA, Brunn.

Amaura, Brunner v. W. Monogr. der Phaneropt. p. 247 (1878).

A South-American genus not previously recorded from Central America.

Synopsis specierum.

a. Pronoti disci canthi laterales tota longitudine acuti. Verticis rostrum in medio constrictum, sulcatum vel potius basi et apice puncto impresso notatum. Elytra angusta, immaculata. Segmentum anale ♂ sinuatum, in medio impressum, tumido-bilobatum, lobis apice trispinosis. Oculi rotundati.—[*spinata*, Brunn. (Argentina).]

aa. Pronoti disci canthi laterales plus minus rotundati vel anterius evanidi. Segmentum anale ♂ truncatum.

b. Elytra angusta.

c. Elytra sparse minute fusco-maculosa. Pronoti canthi tota longitudine distincti. Oculi globosi.—[*punctata*, Brunn. (Peru).]

cc. Elytra tota viridia.

d. Cerci ♂ longi, laminam infra-genitalem duplo superantes.—[*longicercata*, Brunn. (Brazil).]

dd. Cerci ♂ laminam infra-genitalem parum superantes. Canthi pronoti anterius evanidi. Oculi breviter elliptici.—[*olivacea*, Brunn. (Amer. Mer.).]

bb. Elytra latiuscula, ter longiora quam lata. Oculi elongati, elliptici. Cerci ♂ laminam infra-genitalem valde superantia.—1. *latipennis*, sp. n.

1. **Amaura latipennis**, sp. n.

♂. Læte viridis. Caput ab antico angustum. Verticis rostrum angustum, elongatum, valde sulcatum, carinula recta utrinque marginatum, nec constrictum, nec apice nodosum. Oculi elongati, elliptici, quam in *A. olivacea* angustiores ac longiores. Frontis fastigium trigonale ad verticem angulato-hebetatum. Pronotum supra angustum, planissimum, antice valde attenuatum, ad marginem anticum utrinque linea nigra, canthis in dimidia parte antica evanidis; lobi laterales postice rotundati, antice rotundato-angulati, margine infero antice subrecto ad anticum leviter ascendente, incisura humerali profunde acutangula; processus dorsalis posticus propterea insigniter longum. Elytra lata pro genere, apice late rotundata, confertim elevato-reticulata; vena humerali ante medium cum vena discoidali contigua; vena media ante medium oriens, in medio vel paulo ultra medium furcata. Femora anteriora margine antico dentibus 3, intermedia 5. Femora postica utrinque ultra medium spinulis 4–5 nigris. Tibiæ anticæ et intermediæ supra sulcatæ et inermes, subtus spinulosæ. Segmentum anale transversum. Lamina supra-analis valde prominula, inter cercos deflexa, in trigonum elongatum producta. Cerci laminam infra-genitalem dimidia parte apicali superantes, subrecti, apice incurvo, mucronibus nigris brevibus obtusis 2–3 armati. Lamina infra-genitalis brevis parum attenuata, anguste tricarinata, angulis utrinque in dentem obtusam productis, stylis nullis, margine inter illos latiusculo, subrecto.

♂. Long. corp. 14·8; pronot. 4·5; elytr. 24·3; femor. post. 17·5 millim.

Hab. Mexico, Ventanas (*Forrer*).

CERAIA, Brunn.

Ceraia, Brunner v. W. Addit. zur Monogr. der Phaneropt. p. 127 (1891).

1. **Ceraia peraccæ**, Griff.

Ceraia peraccæ, Griffini, Bollet. dei Mus. di Zool. di Torino, xi. no. 232, p. 10 (1896).

"♂. Statura modica, sat robusta; tota viridi-flavescens, nitida. Rostrum verticis sulcatum, cum fastigio frontis in lineolam contiguum. Antennæ rufæ, articulis 1, 2 pallidis, aliquis apice fuscioribus. Pronotum obsolete rugulosum, margine antico recto, postico late rotundato, disco punctis impressis inæquali; sulco typico carinulam transversam includente; canthis rotundatis. Elytra longissima, parum lata, subcoriacea, confertissime reticulata, apice obtusa, in areolis ulnaribus punctis minutis notata, punctisque paucis in

lineam longitudinalem mediam alineatis, obsoletis, ornata. Vena media in medio oriens, in medio furcata; venæ transversæ sat regulariter parallelæ. Pedes postici longissimi. Tibiæ anticæ supra in margine externo spinulis 3–4, pone foraminibus sitis; intermediæ 6-spinulosæ. Segmentum anale margine postico inflexo, concavo, utrinque appendice brevi crassiusculo, tuberculiformi instructum. Cerci breviusculi, punctati, apice mucrone nigro intus inflexo, longitudinem cercorum fere æquante, armati. Lamina infra-genitalis longa, basi partim carinulata, marginibus parallelis; apice ipso subdilatato, concavo, subemarginato, stylos minimos gerente.

"♂. Long. corp. 24; pronot. 7; elytr. 45, lat. 10; femor. post. 32 millim."

Hab. PANAMA, Punta de Sabana, Isthmus of Darien.

According to the author, this species is allied to *C. punctulata*, Brunn., but differs from it in the non-rufous forehead and the very long elytra and hind femora, as well as in the number of spines on the anterior tibiæ and in the structure of the anal pieces.

ECTEMNA, Brunn.

Ectemna, Brunner v. W. Monogr. der Phaneropt. p. 251 (♀).

The males of this genus have a long appendage on each side of their last dorsal segment; the infra-genital plate is elongate-triangular-truncate, bicarinate, the carinæ terminating in the apical angles, which bear short styli.

Synopsis specierum.

1. *Mares.*
   - *a.* Appendices supra-anales apice compressi, dilatati:
     - *b.* apice supra trigonali-lamellares.—1. *dumicola,* sp. n.
     - *bb.* apice ovato-dilatati.—2. *mexicana,* sp. n.
   - *aa.* Appendices supra-anales apice acuti.—4. *carinata,* Brunn.
2. *Feminæ.*

Verticis margo anterior a supero visum in medio ante rostrum deflexum:
- *a.* breviter productum, quam margo transversus utrinque angustior. Statura paulo major. Elytra latiora. Ovipositor supra subtilissime crenulatus.—1. *dumicola*; 2. *mexicana*?
- *aa.* trigonalis, quam margo transversus utrinque paulo latior. Statura minor. Elytra angustiora. Ovipositor supra crenatus.—3. *crenata,* sp. n.

1. **Ectemna dumicola,** sp. n.

Prasina, vertice toto luteo, vel antice luteo-marginato; rostro angusto, acuto, sulcato; ejus margines anteriores supra utrinque ad rostrum transversus. Elytra margine costali anguste rufo.

♀. Ovipositor basi subito incurvus; margine infero semi-orbiculari, supero recto, apice acuto, valvis superioribus fere tota longitudine subtiliter crenulatis, acutissimis, inferiores superantibus; his a medio crenulatis.

♂. Appendices supra-anales longi; apice supra trigonali-compresso-dilatati; dilatatione lamellari, margine postico recto, margine supero arcuato, apice acuto. Cerci longissimi, teretes, subarcuati, punctati, leviter sigmoidales, apice obtuse acuminato, nigro. Lamina supra-analis trigonalis. Lamina infra-genitalis subelongata, retro angustata, bicarinata, apice parum lata, angulatim incisa, angulis truncatis, styligeris. Campus tympanalis elytrorum venis transversis 2, ultra illas late reticulatus, in elytro dextro vitreus.

♀. Long. corp. 28; pronot. 5·2; elytr. 38, lat. 8; femor. post. 25·5; ovipos. 6·5 millim.

♂. Long. corp. 22·5; pronot. 5; elytr. 36, lat. 7; femor. post. 24 millim.

Hab. PANAMA, Bugaba (*Champion*).

2. **Ectemna mexicana,** sp. n. (Tab. XV. figg. 28, 29, ♂.)

♂. *Ectemnæ carinatæ* simillima; paulo gracilior. Margo anterior verticis a supero utrinque obliquus, saltem minus transversus. Pronotum paulo magis compressum; vitta albida utrinque ab oculis supra canthos pronoti producta. Elytrorum margo costalis basi longiuscule rubescens. Processus supra-anales in dimidia parte apicali compressi, ampliatione elongato-ovata, apice subrotundato, margine supero arcuato, margine infero recto, dente subtili terminato. Cerci subsigmoidales, apice paulum arcuati, unguiculo nigro terminati. Lamina supra-analis trigonalis. Lamina infra-genitalis apice quam in *E. truncata* latior, margine postico inter angulos subrecto.

♂. Long. corp. 24·5; pronot. 5; elytr. 35·5, lat. 6·8; femor. post. 22·5 millim.

Figures.—Fig. 28, the male insect.—Fig. 29, the end of the abdomen, from beneath (not exact—the lamina infra-genitalis is wanting and the cerci ought not to be incrassated at the end *).

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

3. **Ectemna crenata,** sp. n.

♀. *Ectemnæ dumicolæ* simillima, at paulo minor. Verticis rostrum basi supra majus, trigonale, minus truncatum, quam margines verticis utrinque latius; margo anterior verticis itaque utrinque obtusangulatim incisus; ejus trigonum medium latitudinem marginis utrinque æquans vel latius. Elytra angustiora. Ovipositor margine supero distinctissime crenato.

♀. Long. corp. 20; pronot. 4·5; elytr. 34·5, lat. 6; femor. post. 21·5; ovipos. 6 millim.

Hab. Mexico, Cordova (*Saussure*).

Brunner v. Wattenwyl (Monogr. Phaneropt. p. 252) doubtfully includes this specimen under *E. carinata.*

[4. **Ectemna carinata,** Brunn.

Ectemna carinata, Brunn. v. W. Addit. zur Monogr. der Phaneropt. p. 131 (♂).

♂. "Carina obliqua loborum deflexorum pronoti atro-lineata, linea alba opposita. Elytra margine antico ipso atrato." Appendices supra-anales acuminati. Lamina supra-analis triangularis. Cerci longi, teretes, sigmoidei, apice truncati. Lamina infra-genitalis brevis, rotundato-emarginata, stylis minimis instructa.

♂. Long. corp. 23; pronot. 4·5; elytr. 42, lat. medio 6; femor. post. 24 millim.

Hab. Brazil, Fonteboa.

Differs from the preceding, *E. crenata*, in the form of the supra-anal appendages. It is a question if the Colombian female belongs to the same species.

Ectemna carinata, Brunn. v. W. Monogr. der Phaneropt. p. 251, t. 5. fig. 76 (♀) (part.).

♀. "Tota viridis. Vertex albo-limbatus. Elytra margine antico ipso basi nigro. Femora antica in latere interno, necnon tibiæ anticæ basi fuscæ. Ovipositor marginibus et apice fuscus."

♀. Long. corp. 26; pronot. 5·5; elytr. 44, lat. in medio 7·5; femor. post. 30; ovipos. 7 millim.

Hab. Colombia (*Brunn. v. W.*).]

[PLAGIOPLEURA, Stål.

Plagiopleura, Stål, Öfv. Vet.-Ak. Förh. xxx. p. 41 (1873); Recens. Orthopt. 2, p. 15; Brunner v. W. Monogr. der Phaneropt. p. 252.

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* Drawn from a specimen in a bad state of preservation.

1. **Plagiopleura arbustorum,** sp. n.

♂. Tota viridis. Apex verticis a supero cuneiformis, sulcatus, basi sub-bituberculatus, apice leviter nodosus, cum fastigio verticis haud contiguus. Ocellus frontalis magnus. Pronotum supra planum, læviusculum, antice angustatum; metazona rugulosa; canthis lateralibus in prozona complete rotundatis; lobi laterales postice altiores, rotundati, margine infero antice arcuatim ascendente. Elytra latiuscula, apice attenuata; vena media ante medium oriens, ac ante ejus medium furcata, ramo postico cum vena ulnari per venulam conjuncto; ramo anteriore apice curvato, apicem elytri attingente; vena ulnaris recta, a venula transversa ad marginem suturalem vergens. Campus tympanalis sinister vena stridulante prima crassissima, secunda graciliore; binis subcontiguis; dexter basi convexus, nitidus, crasse punctatus, vena stridulante obliqua; area postica crasse reticulata, basi ad venam analem campo trigonali membranaceo diffuso instructa. Alæ apice parum acutæ. Femora 1^{m}, 2^{m} in margine antico spinulis 6–7; postica spinis circiter utrinque 10–12 armata; lobi geniculares femorum anticorum acuti, subspiniformes; posticorum leviter spiniformes. Tibiæ 1^{a}–2^{a} supra late sulcatæ, subcanaliculatæ, spina apicali utrinque armatæ; anteriores supra margine externo spinis 3; intermediæ spinis 1–8 instructæ. Segmentum anale excavatum. Cerci crassi, teretes, apice angulatim incurvo, obtuso; parte apicali intus in dentem late trigonalem dilatati. Lamina supra-analis deflexa, tota fissa, fere quadrato-bilobata. Lamina infra-genitalis angusta, compressa, carinata, apice incisa et stylis teretibus longioribus instructa. Mesosternum et metasternum obtusangulatim incisa; mesosterni lobi breviter trigonales; metasterni lobi breviter rotundati.

♂. Long. corp. 25; pronot. 6·5; elytr. 45, lat. 12; femor. post. 33 millim.

? *Var.* ♂ minor. Verticis rostrum apice lamellari-compressum. Ocellus frontalis modice grandis. Pronoti canthi minus rotundati, luteo-lineati. Campus tympanalis elytri sinistri ubique punctatus, rugulosus, venis stridulentibus 2 fere æqualiter crassis. Elytra angustiora.

♂. Long. corp. 23; pronot. 6; elytr. 39, lat. 11; femor. post. 26 millim.

Hab. BRAZIL, Espiritu Santo.]

GODMANELLA, gen. nov.

Verticis rostrum angustum, lanceolatum, horizontale, sulcatum, cum fastigio frontis haud contiguum. Frons utrinque late bisulcata, processu supero subacuto. Oculi globosi, paulo longiores quam altiores. Antennæ setaceæ. Pronotum planiusculum, parallelum, margine postico transverso; canthis lateralibus hebetato-acutis, *subelevatis*; lobi laterales perpendiculares cum disco in angulum rectum exserti. Lobi mesosterni triangulares, illi metasterni complete rotundati. Elytra ovato-lanceolata, margine suturali arcuato; vena humeralis et discoidalis contiguæ, tantum apice leviter remotæ; vena media ultra medium oriens, libera, haud furcata, ante apicem elytri exeuns. Pedes graciles; femora anteriora et intermedia inermia; femora postica gracilia, ultra medium spinulosa. Tibiæ anticæ et intermediæ supra sulcatæ, extus spina apicali instructa; anticæ foraminibus utrinque apertis; intermediæ supra spinulosæ.

♀ ♀. Ovipositor brevis, latiusculus, arcuatus, apice obtusus, utrinque valde punctatus, *basi utrinque conchatus*; margine supero, basi excepta, valde crenato; margine infero apice crenulato.

This genus approaches *Parableta*, Brunn., but differs from it in having the apex of the vertex not contiguous with the process of the forehead, the median vein of the elytra not furcate and flexed, the anterior femora unarmed beneath, and the ovipositor incurved, this latter being neither punctured nor polished and strongly crenulated.

1. **Godmanella vaginalis,** sp. n.

♀. Tota viridis. Verticis rostrum cuneiforme, angustum. Oculi subtus recti. Frons utrinque in longitudinem late impressa, impressione per carinulam rotundatam, supra incompletam, divisa; processu inter antennas cuneiformi. Pronotum planissimum, complete parallelum, margine antico sinuato, postico vix arcuato angulis rotundatis; canthis fere compresso-acutis, subtiliter transverse dense sulcatis; disco postice pictura lyrata sulco circumdata notato. Lobi laterales plani, longiores quam altiores, postice rotundati, angulo

antico rotundato. Elytra parum longa, ovato-lanceolata, densissime reticulata, margine postico parum arcuato, campo marginali minus lato quam pronoti longitudo, venis obliquis undatis instructo; vena media in medio venæ discoidalis oriens, subrecta, nec furcata nec deflexa, prope apicem marginis suturalis excurrens, cum vena ulnari haud conjuncta; hæc recta. Vena discoidalis in tertia parte apicali ramos 2 ad apicem elytri emittens. Campus analis coriaceus, crasse punctato-reticulatus, punctis impressis utrinque ad venam analem fuscis, maculaque longiuscula dorsali baseos ad illam nigra. Campus discoidalis inter venas maculis nonnullis in seriebus dispositis obscure viridibus obsoletis notatus. Tibiæ anticæ supra muticæ; intermediæ spinis 3 : 4. Femora postica subtus utrinque spinis 4–5. Ovipositor brevis, latissimus, punctato-rugulosus, obtusus; margine supero recto, basi obtusangulatim inflexo; in parte recta margine rufo, crasse confertim denticulato; ejus basis utrinque tuberculum ovatum distinctissimum obferens, infra illum utrinque in laminam semiorbicularem grandem, punctatam, productus. Lamina infra-genitalis rotundato-trigonalis inter illas laminas inclusa.

♀. Long. corp. 22; pronot. 5; elytr. 28, lat. 8·5; femor. post. 19·5; ovipos. 7 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

CHLOROSCIRTUS, gen. nov.*

Verticis rostrum angustum, valde sulcatum, apice clause acuminato-hebetatum, cum fastigio frontis haud contiguum. Frons rotundata; fastigio lanceolato, hebetato-acuminato. Pronotum disco plano, canthis acutis, in longitudinem haud sulcatum, sulcis transversis obsoletis, margine antico sinuato, postico rotundato. Lobi laterales altiores quam latiores, margine infero et postico arcuato. Mesosterni lobi trigonales; metasterni lobi simul sumpti, rotundati. Elytra lanceolata, angusta, viridia, margine postico subrecto; venæ humeralis et discoidalis contiguæ, in tertia parte apicali disjunctæ; vena media furcata, ad marginem posticum excurrens; vena ulnaris subundata, apice ad marginem posticum deflexa. Alæ acuminatæ. Pedes graciles; femora antica in margine antico spinulis minimis 2–3 armata. Tibiæ anticæ et intermediæ sulcatæ, supra muticæ, subtus spinulosæ; anticæ supra spina apicali nulla, basi utrinque tympano aperto; infra foramina valde attenuatæ, gracillimæ. Tibiæ intermediæ supra margine postico spinulis 1–2. Femora postica parum elongata, in parte apicali linearia, subtus utrinque spinulosa; lobi geniculares haud acuti.

♂ ♂. Segmentum anale margine postico sinuato; angulis productis, appendicibus minutis instructis. Cerci teretes, arcuati. Lamina infra-genitalis carinata, apice biramosa; ejus rami stylis longis instructi.

♀ ♀ ignotæ.

This genus is nearly allied to *Plagiopleura*, differing from it in having the eyes somewhat ovate; the metasternal lobes not separated by a triangular notch; and the median vein of the elytra not straight and not reaching the tip. *Chloroscirtus* might be placed next *Parableta*, the median vein of the elytra being directed, as in that genus, to the hind margin of these organs.

In its general facies *Chloroscirtus* resembles *Scudderia*, but differs from that genus in having the vertex not contiguous to the forehead. The males may be distinguished from those of *Scudderia* by the existence of long styli on the infra-genital plate. In both sexes the elytra are more attenuate towards the end, and the tip therefore is more narrowly rounded.

Obs.—When the styli are broken off, the males might be mistaken for the same sex of *Scudderia*.

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* χλωρὸς, *viridis*; σκιρτάω, *salire*.

1. **Chloroscirtus forceps,** sp. n. (Tab. XV. figg. 24–27.)

Totus viridis, immaculatus. Caput angustum. Oculi globosi, vel horizontaliter subovati. Frons utrinque infra oculos breviter impressa. Pronoti canthi rotundato-acuti, recti, flavi; lobi laterales margine infero toto rotundato, in medio altiores. Elytra longissima, angustissima, modice coriacea, nitida, densissime reticulata, venisque transversis parallelis distinctis. Campus marginalis parum latius reticulatus, parum translucidus, venis costalibus numerosis, apice furcatis; vena mediastina distincta, brevis, ramosa. Campus tympanalis sinister crasse punctatus, dexter reticulatus, areola trigonali diaphana. Femora postica sat brevia, ultra medium elytrorum attingentia, vix dimidia parte apicali lineari.

♂. Segmentum anale latissimum, margine deflexo. Lamina supra-analis abscondita, ad inferum deflexa, perpendicularis, rotundata, in medio profunde fissa, rotundato-bilobata. Segmentum anale supra in medio sulcum in forma litteræ **Y** præbens, margine postico sinuato, ejus angulis appendicibus brevissimis minutis compressis instructis. Cerci (fig. 27) arcuati, apice oblique truncato, acuto, nigro, subtus dente apicali minimo instructo, ac intus ante apicem spina fusca longissima, acutissima, perpendiculari armati. Lamina infra-genitalis (fig. 26) longe forcipato-producta; in parte basali acute carinata; carina apice in angulo forcipis dentem acutam trigonalem formante; rami forcipis dimidiam longitudinem totæ laminæ infra-genitalis æquantes, compressi, arcuati, facie interna sulcata, externa late rotundato-carinata; ramis simul sumptis ellipsam apice apertam formantibus. Elytri dextri tympanum speculo trigonali, reticuloque hyalinis.

♂. Long. corp. supra 21·5; cum lam. subg. 24; pronot. 5·8; elytr. 36, latit. 7·5; femor. post. 19 millim.

Figures:—Fig. 24, the male insect.—Fig. 25, the end of the abdomen from above.—Fig. 26, ditto, from below, showing the infra-genital plate with its forceps, terminated by the styli.—Fig. 27, one of the ♂ cerci magnified.

Hab. Guatemala, Dueñas (*Champion*).

When the styli are broken off, the present species might easily be confounded with *Scudderia forcipata* (infrà, p. 332), which has a very similar infra-genital plate; but the ends of the branches of the infra-genital plate appear to be finely notched, with the inferior angle triangular and compressed, while in *S. forcipata* the ends of the branches of the forceps are attenuated and rounded.

Group **SCUDDERIITES.**

Scudderiæ, Brunner v. W. Monogr. der Phaneropt. p. 236.

SCUDDERIA, Stål.

Phaneroptera, Serville, Orthopt. p. 416 (1831); Burmeister, Handb. d. Ent. ii. p. 690; Harris, Treatise Ins. injur. to Veget. p. 190 (partim).

Scudderia, Stål, Öfv. Vet.-Akad. Förh. xxx. p. 41 (1873); Recens. Orthopt. 2, p. 14; Brunner v. W. Monogr. der Phaneropt. p. 236.

The members of this genus are spread over North and South America, most of the northern forms extending into Mexico. The southern representatives are generally of larger size. The males of the various species are easily separated by the form of the anal plate, but most of the females are very similar to each other. The dorsal field of the males is broadly reticulated, often hyaline in the cells; in the right elytron its reticulation is mostly subhyaline. The ovipositor of the female varies in its breadth and curvature, though differing slightly in form according to the species.

Synopsis specierum.

I.

a. Femora postica subtus in margine interno spinulis 2–6 minimis nigris instructa, margine externo inermi (elytra parum coriacea).

b. Pronoti discus retro vix dilatatus, canthis lateralibus rotundatis. Elytra quam pronoti longitudo parum latiora, elongata, vena principali subrecta. Lamina infra-genitalis ♂ processum analem superans, breviter furcata.

c. Processus analis ♂ subtus processum nullum emittens.

d. Processus analis apice trigonali-incisus, bilobatus, lobis transverse compressis. Ovipositor latus, quam margo anterior pronoti paulo angustior, margine supero basi fere rectangulatim incurvo, dehinc recto.—[1. *laticauda*, Brunn.]

dd. Processus analis remote furcatus, lobis in longitudinem compressis.—[2. *texensis*, sp. n.]

cc. Processus analis ♂ subtus processum emittens.—3. *paronæ*, Griff.

bb. Pronoti discus canthis lateralibus subacutis. Ovipositor angustior, margine supero basi arcuatim sinuato.

c. Processus analis ♂ apice furcatus.

d. Processus analis incurvus, ramis furcæ crassis, fere forcipiformibus, a latere dilatatis, crassissimis, margine infero valde arcuato, basi haud lobato.—[4. *furcata*, Brunn.]

dd. Processus analis minus incurvus, ramis furcæ gracilioribus.

e. Pronotum antice et postice subangulatum. Elytra angusta ut in præcedentibus, vena principali subrecta, quam pronoti longitudo paulum latiora.

f. Processus analis subtus ad furcam sinuato-incisus, ante illam utrinque lobatus ; ramis furcæ subtus compressis, crenatis vel dentatis. Ovipositor plica basali concolore.—5. *furculata*, Brunn.

ff. Processus analis subtus totus leviter sinuatus, haud lobatus, ramis furcæ subtus crassis, rotundatis. Ovipositor nonnunquam plica basali nigro-notata.—6. *curvicauda*, De G.

ee. Pronotum retro distincte dilatatum. Elytra breviora, latissima. Elytra quam pronoti longitudo sesqui-latiora, apice late rotundata, vena principali flexuosa. Processus analis vix arcuatus, a supero apice dilatatus, arcuatim minute incisus, rotundato-bilobatus (sicut in *laticauda*).—[7. *pistillata*, Brunn.]

cc. Processus analis ♂ rotundatim productus, margine postico subemarginato.—8. *angustifolia*, Harris.

aa. Femora postica subtus utrinque spinulosa.

b. Femora postica subtus utrinque spinulis plurimis armata. Segmentum anale ♂ truncatum, angulis spinosis, processu nullo. Lamina infra-genitalis in medio fissa, dimidia parte apicali divisa, forcipiformi.—9. *forcipata*, Brunn.

bb. Femora postica subtus margine externo spinula unica armato. Segmentum anale ♂ in processum excurrens. Lamina infra-genitalis incurva, angusta, apice incisa.—3. *paronæ*.

II.

I. *Feminæ.*

a. Crassiuscula; pronoto retro distincte dilatato. Elytra lata, quam longitudo pronoti fere duplo latiora.—[7. *pistillata.*]

aa. Graciles; pronoto retro parum dilatato. Elytra angustula.

b. Femora postica subtus spinulis minimis nigris remotis paucis instructa. Elytra submembranacea. Tibiæ anticæ supra margine externo subspinulosæ.

c. Ovipositor latus, margine antico pronoti æquilatus vel latior, supra fere rectangulatim curvatus.—[1. *laticauda.*]

cc. Ovipositor minus latus, diverse incurvus.

d. Ovipositor plicis basalibus nigro-maculatis.—[2. ? *texensis*]; [4. *furcata*]; 6. *curvicauda*; 8. ? *angustifolia.*

dd. Ovipositor plicis basalibus concoloribus.—[2. ? *texensis*]; 5. *furculata*; 8. ? *angustifolia.*

bb. Femora postica subtus apice utrinque spinulis 4–5 instructa. Elytra subcoriacea. Tibiæ anticæ supra inermes.—9. *forcipata.*

II. *Mares.*

a. Segmentum anale in processum pistilliformem excurrens (Tab. XV. fig. 20) (processus gracilis apice breviter dilatatus, incisus, vel rotundato-bilobatus). Lamina infra-genitalis elongata, arcuata, in processum arcuatum gracile longe producta, apice inciso.

b. Lobi apicales processus analis dilatati, supra rotundati.

c. Processus analis subtus lobatus:

d. subtus laminatim productus:

e. subtus lamina elongato-rotundata instructus; lobis apicalibus deplanatis, rotundatis.—[1. *laticauda.*]

ee. subtus lobo rotundato, postice angulato instructus; lobis apicalibus elongatis, parallelis, supra teretibus, subtus lobatis.—5. *furculata.*

dd. in appendicem calcariformem productus.—3. *paronæ.*

cc. Processus analis subtus haud laminatim productus.

d. Processus analis rectus, lobis apicalibus rotundatis, deplanatis.—[7. *pistillata.*]

dd. Processus analis profundius incisus, breviter furcatus, lobis apicalibus crassiusculis, haud depressis:

e. lobis apicalibus subtus rotundato-tumidis.—[4. *furcata.*]

ee. lobis apicalibus subtus vix tumidis.—6. *curvicauda.*

bb. Lobi apicales processus analis remoti, compressi.—[2. *texensis.*]

aa. Segmentum anale truncatum, processu nullo.

b. Cerci ante apicem spina nulla armati.

c. Lamina infra-genitalis ♂ in stylos 2 parallelos producta.—8. *angustifolia.*

cc. Lamina infra-genitalis apice valde forcipiformis.—9. *forcipata.*

bb. Cerci ante apicem spina longa armata. Lamina infra-genitalis forcipata.—(*Chloroscirtus forceps*, anteà, p. 327.)

[1. **Scudderia laticauda,** Brunn. (Tab. XV. fig. 15.)

Scudderia laticauda, Brunn. v. W. Monogr. der Phaneropt. p. 238. 1.

Statura majore. Pronotum disco plano, canthis concoloribus. Lobi meso- et metasterni supra basin coxarum extensi, illi mesosterni plus minus acuti. Elytra longa. Femora postica subtus utrinque spinulis nigris minutis nonnullis.

♀. Ovipositor latus, quam margo anterior pronoti latior, subito ad superum incurvus, basi utrinque macula nigra, margine supero fere rectangulatim curvato. Cerci apice nigri.

♂. Campus tympanalis elytrorum late reticulatum; in elytro dextro membranaceo; vena stridulante transversa, in elytro sinistro acuta. Cerci incurvi. Segmentum anale in processum pistilliformem excurrens, apice breviter bilobatum, lobis rotundatis, valde divergentibus, margine apicali deplanato; subtus processum securiformem grandem compressum emittens. Lamina infra-genitalis processum supra-analem valde superans, carinata, apice compresso-rotundatim incisa. (Georgia.)

Var. Ovipositor latissimus (lat. 3·5 millim.), parum incurvus, margine superiore basi parum sinuato. (Georgia.)

Var. Major. Ovipositor paulo angustior, rectangulatim incurvus. (Texas.)

Hab. North America, Georgia, Texas.]

[2. **Scudderia texensis,** sp. n. (Tab. XV. figg. 18, 19.)

♂. Rostrum verticis angustum. Pronotum planulum, angustum, anterius leviter angustatum, canthis luteis; lobis lateralibus æque altis ac longis. Elytra longa, latiuscula, apice oblique truncata, rotundata. Campus tympanalis vena transversa unica, in elytro sinistro crassa, rotundata, polita. Processus analis (fig. 18) apice rotundatus, utrinque lobo valde compresso instructus, scilicet late remote furcatus, ramis furcæ a supero sublamellaribus, brevibus, rotundatis, divergentibus, basi invicem remotis. Cerci valde incurvi, truncati. Lamina infra-genitalis (fig. 19) processum analem superans, apice incisa, compressa.

♂. Long. corp. 21; pronot. 6; femor. post. 28 millim.

Figures:—Fig. 18, the anal dorsal segment of the male, with its process.—Fig. 19, the end of the abdomen in profile.

Hab. North America, Dallas in Texas (*Boll*).

This species closely resembles *S. furculata*, Brunn., but differs from it in having the anal process not narrowly forked, obtuse at the tip, and bearing on each side of the tip a sort of compressed lamella, forming a very wide short fork.]

3. **Scudderia paronæ,** Griff.

Scudderia paronæ, Griffini, Bollet. dei Mus. Zool. di Torino, xi. no. 232, p. 23 (1896).

♂. Viridis. Frons hic illic leviter nebulosa, cum vertice non perfecte contigua, macula obsoleta rufa. Oculi globosi, prominuli. Rostrum verticis compressum, subsulcatum, apice nodosum, a latere visum concavum. Antennæ longe fusco et flavido annulatæ. Pronotum canthis complete rotundatis; lobis lateralibus postice oblique subtruncatis. Lobi sternales parvi, rotundati, supra coxas nullo modo extensi. Elytra nitida, apicem femorum posticorum parum superantia; vena media parum ante medium furcata. Femora postica subtus margine interno spinulis 3, externo 1. Segmentum anale in processum pistilliformem productum, apice in lobos 2 crassos obtusos subduplo longiores quam latiores furcatum, subtus prope basin incrassatum, sulcatum, subconcavum, appendicemque compressum retro-vergentem, apice rotundatum, medium laminæ infra-genitalis tangente, formans. Cerci crassiusculi, apice incurvo, tuberculato, dilatato et nigro-mucronato. Lamina infra-genitalis pistillo æquilonga, subparallela, apice incisa obtuse biangulata.

♂. Long. corp. 20·5; pronot. 5; elytr. 28, lat. 6; femor. post. 23 millim.

Hab. Panama, Colon.

[4. **Scudderia furcata,** Brunn. (Tab. XV. figg. 16, 17.)

Scudderia furcata, Brunn. v. W. Monogr. der Phaneropt. p. 239. 2, t. 5. fig. 72 *a*.

Fastigium verticis apice obtusum. Meso- et metasterni lobi infra coxas producti.

♀. Ovipositor latiusculus, margine supero basi valde incurvo.

♂. Campus tympanalis elytri sinistri vena transversa acuta, bicarinulata, vel crassa, rotundata. Processus analis apice valde furcatus (fig. 17), anguste profunde incisus; ramis furcæ crassis, rotundatis, a supero arcuatis, fere forcipiformibus, subtus tumidis (fig. 16), basi nigris. Cerci valde incurvi, acuminati. Lamina infra-genitalis valde curvata, processum superans, apice compressa, incisa.

♀. Long. corp. 18; pronot. 6; elytr. 31; femor. post. 26; ovipos. 6 millim.

♂. Long. corp. 16; pronot. 6; elytr. 30; femor. post. 25 millim.

FIGURES:—Fig. 16, the end of the male abdomen in profile.—Fig. 17, its dorsal anal segment, with process.

Hab. NORTH AMERICA, Maine, Georgia, Texas (*Boll*).]

5. **Scudderia furculata,** Brunn. (Tab. XV. fig. 21.)

Phaneroptera mexicana, Sauss. Rev. et Mag. Zool. (2) xiii. p. 129 (1861).

Scudderia furculata, Brunn. v. W. Monogr. der Phaneropt. p. 239. 3, t. 5. fig. 72 *b*.

S. furcatæ simillima; pronoti canthis flavescentibus.

♀. Ovipositor regulariter arcuatus.

♂. Campus tympanalis elytri sinistri vena transversa crassa, rotundata. Processus segmenti analis haud incrassatus, ac longe furcatus; ramis parallelis, compressis, subtus margine lamellari basi sinuato, ante sinum utrinque lobo compresso instructo. Lamina infra-genitalis processum leviter superans, apice compressa, breviter incisa.

♀. Long. corp. 22; pronot. 5·6; elytr. 35, lat. 5·5; femor. post. 25; ovipos. 6·5 millim.

♂. Long. corp. 22; pronot. 5·2; elytr. 33, lat. 5·5; femor. post. 25 millim.

FIGURE:—Fig. 21, the end of the abdomen of the male, in profile.

Hab. NORTH AMERICA, Texas.—MEXICO (*Mus. Genavense*), Rincon, Amula, and Omilteme in Guerrero, Orizaba and Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

6. **Scudderia curvicauda,** de Geer. (Tab. XV. fig. 20.)

Locusta curvicauda, de Geer, Mém. Ins. iii. p. 446 (1773); Götze, Abhandl. Ins. iii. p. 289.

Scudderia curvicauda, Stål, Recens. Orthopt. 2, p. 30; Brunn. v. W. Monogr. der Phaneropt. p. 240. 4.

Pronoti canthi lutei.

♀. Ovipositor supra fere angulatim incurvus, plica basali nigro-maculata.

♂. Vena stridulans elytri sinistri crassissima, lævis, deplanata, vel subsulcata. Processus analis (fig. 20) pistilliformis, furca brevi, acute incisus; ejus rami valde obtusi, rotundati, margine inferiore anguste rotundato, subtus ad basin subtuberculato-tumidi vel dente minimo instructi. Lamina infra-genitalis processum vix superans, apice compressa, incisa.

Var. Marium processus analis in incisura apicali tuberculo minuto prædītus.

♀. Long. corp. 22; pronot. 6; elytr. 35; femor. post. 26; ovipos. 8 millim.

♂. Long. corp. 18; pronot. 5; elytr. 31; femor. post. 23 millim.

FIGURE.—Fig. 20, the anal dorsal segment of the male, with its process, from above.

Hab. MEXICO, Orizaba (*Saussure*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

The fork of the anal segment of the male much resembles that of *S. furcata*, but its branches are more obtuse and rounded at the tip, and but slightly tumid beneath.

[7. **Scudderia pistillata,** Brunn.

Scudderia pistillata, Brunn. v. W. Monogr. der Phaneropt. p. 240. 5; Scudder, Proc. & Trans. of the Nova Scotia Instit. of Sci. ix. p. 211 (1896).

Fastigium verticis a latere sinuatum. Pronotum supra latum, retro-dilatatum; canthis anguste luteis; lobis lateralibus longiusculis, symmetricis, margine infero *in medio* rotundato-angulatis. Elytra grandia, latissima; vena principali valde flexuosa, campo marginali lato. Mesosternum et metasternum lata. Femora postica subtus inermia vel in margine interno spinulosa.

♀. Ovipositor valde dilatatus, quam margo anticus pronoti latior; margine supero obtusangulatim incurvo; plica basali atro-maculata.

♂. Campus tympanalis elytrorum in utroque elytro hyalinescens; vena stridulante sinistra arcuata, crassa, subsulcata. Segmenti analis processus pistilliformis ante apicem haud constrictus, apice brevissime rotundato-bilobatus; lobis parum dilatatis, deplanatis. Cerci breves, arcuati. Lamina infra-genitalis valde arcuata, processum valde superans, apice compressa, triangulariter incisa.

♀. Long. corp. 18; pronot. 5·5; elytr. 30, lat. 9; femor. post. 21; ovipos. 6·5 millim.

♂. Long. corp. 15; pronot. 5; elytr. 27, lat. 8; femor. post. 21 millim.

Hab. North America, Georgia.]

8. **Scudderia angustifolia,** Harris.

Phaneroptera angustifolia, Harris, Treatise on Ins. injur. to Veget. p. 160, fig. 76 (1862).

Scudderia angustifolia, Brunn. v. W. Monogr. der Phaneropt. p. 241. 6.

Phaneroptera curvicauda, Scudder, Boston Journ. of Nat. Hist. vii. p. 448 (1862).

Pronoti lobi laterales haud symmetrice rotundati, margine postico arcuato, margine antico perpendiculari, dehinc subito ad inferum arcuato. Elytra angusta, parallela, apice regulariter rotundata.

♀. Ovipositor modice latus, arcuatus.

♂. Campus tympanalis sinister hyalinescens, vena stridulante lata, crassissima, deplanata, basi subtumida, nitida; campus dexter in medio area grandi subquadrata membranacea haud reticulata. Segmentum anale transversum, per sulcum divisum, margine postico vix arcuato; processu nullo. Cerci longiusculi, arcuati, acuti. Lamina infra-genitalis retro-attenuata, apice longe fissa et incisa vel potius in processibus 2 rectis subfiliformibus, longis, ad apicem cercorum attingentibus, producta.

♀. Long. corp. 22; pronot. 5; elytr. 35, lat. 5·5; femor. post. 23; ovipos. 6 millim.

♂. Long. corp. 15; pronot. 4·5; elytr. 28, lat. 5; femor. post. 23 millim.

Hab. North America, Massachusetts, Maine. — Panama, Chiriqui, Bugaba (*Champion*).

9. **Scudderia forcipata,** Brunn. (Tab. XV. figg. 22, 23.)

Scudderia forcipata, Brunn. v. W. Monogr. der Phaneropt. p. 242. 7 (♂).

♂. Verticis rostrum angustum. Pronoti canthi acuti, anguste lutei. Lobi laterales pronoti altiores quam latiores, margine antico pone oculos subsinuato. Elytra sat coriacea. Mesosterni lobi triangulares. Tibiæ anticæ supra inermes. Femora postica basi crassiuscula, subtus apice utrinque spinulis 5 armata. Campus tympanalis sinister coriaceus, vena stridulante lata, deplanata, obsoleta; campus tympanalis dexter in medio areola hyalina. Segmentum anale transverse quadratum, late subsinuatum, angulis dentatim productis, acutis. Cerci longi, cornei, teretes, apice supra compresso-dilatati; ampliatione

angulo supero trigonali, angulo infero dente ac uncino armato. Lamina infra-genitalis longe producta, dimidia parte apicali in ramos 2 angustos divisa ; his incurvis, simul sumptis forcipem efficientibus.

♂. Long. corp. 22; pronot. 6 ; elytr. 34 ; femor. post. 19 ; lam. infra 6·5 millim.

FIGURES.—Fig. 22, the end of the male abdomen from above.—Fig. 23, the infra-genital plate.

Hab. MEXICO (*Mus. Genavense*), Cordova (*Saussure*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*).

Var. Cerci apice maxime dilatati, ampliatione angulo supero compresso-trigonali, margine postico dente instructo, angulo infero in unguem longissimum arcuatum nigrum producto. Elytra paulo breviora. Canthi dorsales pronoti et elytrorum lutei.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

A very peculiar species, not only by its rather coriaceous elytra, but principally by the form of the lateral lobes of the pronotum and of that of the anal appendages, these latter being very different in shape from those of the other members of the genus. The male only is known.

Group **SCAPHURITES.**

Scaphuræ, Brunner v. W. Monogr. der Phaneropt. p. 26.

SCAPHURA, Kirby.

Scaphura, Kirby, Zool. Journ. i. p. 429 (1825), and ii. p. 9, t. 1. figg. 1–6 ; Brunn. v. W. Monogr. der Phaneropt. p. 225 ; Additam. p. 134.

Scaphura et *Gymnocera,* Brullé, Hist. des Ins. ix. p. 145 (1835) ; Serville, Orthopt. pp. 145, 428 ; Burmeister, Handb. d. Ent. ii. p. 687 ; Perty, Del. Anim. Art. Bras. p. 120.

Piliger, Thunberg, Ins. Hemipt. tria genera, p. 3 (1825).

1. **Scaphura bicolor,** Brunn.

Scaphura bicolor, Brunn. v. W. Additam. zur Monogr. der Phaneropt. p. 134. 8.

" Corpus atrum, nitidum. Antennæ valde incrassatæ et dense hirsutæ, basi atræ, pone tertiam partem basalem ferrugineæ. Pronotum atrum, velutinum. Elytra ferruginea, margine antico basi atro-fasciata. Alæ ferrugineæ. Pedes atri, nitidi. Femora postica supra maculis flavis duabus ornata. Ovipositor pronoto duplo longior, nitidus, læviusculus, apice obtusus." (*Brunn.*)

♀. Long. corp. 20 ; pronot. 5 ; elytr. 25 ; femor. post. 23 ; ovipos. 10 millim.

Hab. PANAMA, Chiriqui.

Group **PHRIXITES.**

Phrixæ, Brunner v. W. Monogr. der Phaneropt. p. 262.

PHRIXA, Stål.

Phrixa, Stål, Recens. Orthopt. 2, p. 16 (1874) ; Brunner v. W. Monogr. der Phaneropt. p. 263.

A very peculiar genus, the species of which have broad and obliquely truncated

elytra. In the males the anal field is very small, coriaceous, densely punctate-reticulate, and the stridulating vein is very obsolete above on the left elytron.

This genus is known only from Mexico.

Synopsis specierum.

a. Elytrorum vena humeralis venæ discoidali apposita, ab illa tantum per sulcum separata. Verticis rostrum scrobicula antennarum superans :

b. distincte superans.—1. *nasuta,* Stål.

bb. leviter superans.

c. Femina.—2. *schumanni,* sp. n.

cc. Mares.

d. Cerci apice trigonales, dilatati, compressi.—3. *hoegei,* sp. n.

dd. Cerci longissimi, apice attenuati.—4. *maya,* sp. n.

aa. Elytrorum vena humeralis obliqua, a vena discoidali divergens. Verticis rostrum scrobiculas antennarum haud superans.—5. *simà,* Brunn.

1. **Phrixa nasuta,** Stål.

Phrixa nasuta, Stål, Recens. Orthopt. 2, p. 36 (1874) ; Brunner v. W. Monogr. der Phaneropt. p. 263. 1, t. 6. fig. 80.

Species per rostrum verticis elongatum a sequentibus distincta.

♂. Cerci a basi semicirculariter incurvi, apice compressi et laminatim dilatati, acuminati.

Hab. Mexico, Cordova, Oaxaca.

Unknown to us.

2. **Phrixa schumanni,** sp. n.

♀. Verticis rostrum obtusum, apice punctis minutis impressis 3. Lobi laterales pronoti angulo antico subrotundato, margine infero antice recto. Elytra subcoriacea, margine costali arcuato ; venis principalibus 2 prope apicem divergentibus ; apice angulato. Ovipositor subsquamosus, margine supero denticulato, infero in dimidia parte apicali crenulato.

♀. Long. corp. 23 ; pronot. 6 ; elytr. 34 ; femor. post. 20 ; ovipos. 8 millim.

Hab. Mexico, Atoyac in Vera Cruz (*Schumann*).

3. **Phrixa hoegei,** sp. n. (Tab. XVI. fig. 1.)

♂. *P. mayæ* haud dissimilis, elytris tamen valde brevioribus. Differt præsertim cercorum forma ; hi arcuati, teretes, apice trigonaliter compressi, ampliatione extus concava, angulo supero in acumen producto, infero rotundato.

♂. Long. corp. 23 ; pronot. 6 ; elytr. 26·5 ; femor. post. 20·5 millim.

Figure.—Fig. 1, a cercus of the male.

Hab. Mexico, Cordòva (*Höge*).

Differs from *P. nasuta* in having the rostrum of the vertex not produced beyond the foveolæ of the antennæ.

4. **Phrixa maya,** sp. n. (Tab. XVI. fig. 2, ♂.)

♂. Verticis rostrum apice anterius impressione notatum. Occiput sparse subgranulatum. Lobi laterales pronoti margine inferiore obliquo, subsinuato. Elytra subcoriacea, illis *P. schumanni* fere consimilia, apice tamen minus oblique truncata ac minus acuta. Campus tympanalis coriaceus, reticulato-punctatus, intus in medio areolis fuscis, propterea partem infuscatam obferens; vena stridulante supra obsoletissima. Cerci longissimi plus quam semicirculariter arcuati, teretes, ad tertiam partem apicalem subangulati, dehinc in unguem longissimum leviter arcuatum excurrentes; ungue extus basi faveolato, apice acuto, nigro. Lamina infra-genitalis producta, subtus sulco exarata, apice angulato-incisa, stylis brevibus instructa.

♂. Long. corp. 21; pronot. 7; elytr. 33; femor. post. 23 millim.

Hab. Mexico, Valladolid in Yucatan (*Gaumer*).

5. **Phrixa sima,** Brunn.

Phrixa sima, Brunn. v. W. Monogr. der Phaneropt. p. 264. 2.

"Statura minore. Fastigium (rostrum) verticis subsulcatum, ultra marginem scrobum antennarum non productum. Elytra vena mediastina obliqua. ♀."

♀. Long. corp. 24; pronot. 8; elytr. 35, lat. 15; femor. post. 23; ovipos. 8·5–10 millim.

♀. Long. corp. 23; pronot. 5–6; elytr. 20, lat. 12; femor. post. 19 millim.

Hab. Mexico, Vera Cruz, Orizaba.

Unknown to us.

Group **AMBLYCORYPHITES.**

Amblycoryphæ, Brunner v. W. Monogr. der Phaneropt. p. 264.

AMBLYCORYPHA, Stål.

Orophus, Saussure, Rev. et Mag. Zool. (2) xi. p. 204 (1859) (partim).
Amblycorypha, Stål, 1873, Öfv. Vet.-Ak. Förh. xxx. 4, p. 40 (1873); Recens. Orthopt. 2, p. 18; Brunner v. W. Monogr. der Phaneropt. p. 265.

In the males of this genus the tambourine of the elytra is somewhat characteristic, but its structure is difficult to define. In some species there are, in the left elytron, two transverse elevated parallel veins, and in addition to these veins the tympanal field presents, besides the dense reticulation, a wide reticulation, formed by flexuous nervures (*A. oblongifolia*, *A. uhleri*, *A. rotundifolia*). In other species there is only one transverse (stridulating) vein (*A. tepaneca*, *A. guatemalæ*).

Synopsis specierum *.

1. Pronoti lobi laterales margine postico rotundato. Metasternum lobis rotundatis instructum.
   2. Pronoti canthi tota longitudine acuti. Femora postica in apicem elytrorum non attingentia. ♀ ♂.

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* Secundum Brunner v. Wattenwyl, *l. c.*

3. Majuscula. Pronotum elongatum, anterius valde constrictum. Femora postica tantum margine interno spinuloso. Elytrorum campus analis ♂ infuscatus. Ovipositor semicirculariter incurvus, pronoti longitudinem duplicem non attingens.—[1. *oblongifolia*, de Geer.]

3, 3. Minor. Pronotum brevius. Femora postica in utroque margine spinulosa. Elytrorum campus analis ♂ concolor.

4. Media. Pronotum breviusculum.—2. *guatemalæ*, sp. n.

4, 4. Minuta. Pronotum angustatum.—3. *tepaneca*, sp. n.

2, 2. Pronoti canthi rotundati, anterius nulli. Femora postica elytra superantia, subtus margine interno tantum in medio spinuloso.

3. Media. Femora postica ♀ ♂ elytra superantia, margine interno in medio spinuloso. Ovipositor subrectus, pronoti longitudinem triplicem subattingens.—4. *huasteca*, Sss.

3, 3. Minuta. Femora postica ♂ elytra superantia, ♀ breviora, margine interno in medio spinulis tantum 1–3. Ovipositor pronoto parum longior.—[5. *uhleri*, Sss.]

1, 1. Pronoti lobi laterales margine postico subrecto, obliquo. Metasternum transversum, margine postico subrecto.

2. Elytra pronoto triplo vix longiora. Alæ elytris breviores. Statura majore.—[6. *parvipennis*, Stål.]

2, 2. Elytra pronoto quadruplo longiora. Alæ elytra superantia. Statura minore.—[7. *rotundifolia*, Scudd.]

[1. **Amblycorypha oblongifolia**, de Geer.

Locusta oblongifolia, de Geer, Mém. Ins. iii. p. 445, t. 38. fig. 2 (1773).

Gryllus oblongifolius, Harris, Cat. Anim. Mass. in Hitchcock's Report on Geol. &c. p. 582 (1833).

Phylloptera oblongifolia, Burm. Handb. d. Ent. ii. p. 693; Harris, Treatise on Ins. injur. to Veget. p. 159 (ed. 1862) (excl. fig. 75); Scudd. Bost. Journ. Nat. Hist. vii. p. 444 (1862).

Amblycorypha oblongifolia, Stål, Recens. Orthopt. 2, p. 42; Brunn. v. W. Monogr. der Phaneropt. p. 266. 1.

Hab. North America, Massachusetts, Pennsylvania, Connecticut, Georgia, Texas.

Var. Statura paulo major. Pronoti canthi fusci. Elytrorum campus analis ad violaceum vergens.

Hab. North America, Texas.

This species will certainly be found in Northern Mexico.]

2. **Amblycorypha guatemalæ**, sp. n. (Tab. XVI. fig. 3, ♂.)

♂. *A. oblongifoliæ* simillima. Pallide viridis. Pronotum breviusculum, antice minus coarctatum, disco plano; canthis tota longitudine acutissimis, margine antico sinuato; lobis lateralibus late rotundatis, antice angulatis. Elytra femora postica superantia, obtusa, sicut in specie laudata; vena media furcata, vena ulnari ab illa libera. Campus tympanalis haud nigro maculatus. Sinister coriaceus, dense punctato-reticulatus, vena stridulante crassissima, deplanata, subsulcata, sulco intus incompleto; dexter diaphanus, thalassinus, extus area trigonali, intus areola ovata, hyalinis. Lobi metasternales breves, trigonales; lobi mesosternales rotundati. Femora postica subtus in utroque margine dimidia parte apicali spinulosa.

Cerci ♂ a basi incurvi, subacuminati. Lamina infra-genitalis incisa, stylis mediocribus instructa. (Variat elytris brunneo-punctatis.)

♂. Long. corp. 20; pronot. 6; elytr. 32, lat. 12; femor. post. 22 millim.

FIGURE:—Fig. 3, part of the male insect.

Hab. GUATEMALA (*Mus. Genavense*).

Allied to *A. oblongifolia*, but distinguished by its short pronotum. (In *A. oblongifolia* the pronotum is elongated and much contracted anteriorly, and the posterior femora are spined along their inner margin.)

3. **Amblycorypha tepaneca,** sp. n.

♂. Minuta. Pallide viridis. Pronotum supra planum; canthis totis acutissimis, anterius per sulcos bisectis, margine postico arcuato; lobis lateralibus æque longis ac altis, postice rotundatis, margine infero subrecto, subsinuato. Lobi metasternales et mesosternales rotundati. Elytra latiuscula, femora postica superantia, margine suturali arcuato. Vena media furcata; ejus ramus anterior apicem elytri reticulatim attingens, cui vena principalis apice ramum nullum emittit. Campus tympanalis elytri sinistri coriaceus, valde punctatus, haud fusco-maculatus; vena stridulante duplice, scilicet per sulcum divisa. Femora postica subtus in utroque margine spinulosa. Cerci recti, apice imo incurvi, unguiculati. Lamina infra-genitalis apice carinata, transversa, stylis brevissimis instructa.

♂. Long. corp. 14·5; pronot. 3·5; elytr. 27·5, lat. 9·5; femor. post. 20·8 millim.

Hab. MEXICO (*Mus. Genavense*).

4. **Amblycorypha huasteca,** Sauss. (Tab. XVI. fig. 4.)

Phylloptera (*Orophus*) *huasteca,* Sauss. Rev. et Mag. Zool. (2) xi. p. 205 (1859).
Amblycorypha huasteca, Brunn. v. W. Monogr. der Phaneropt. p. 266. 2.
Phylloptera caudata, Scudd. Bost. Journ. Nat. Hist. vii. p. 445 (1862).

Hab. NORTH AMERICA, Louisiana, Texas.—MEXICO, Tampico (*Saussure*).

[5. **Amblycorypha uhleri,** Stål.

Amblycorypha uhleri, Stål, Obs. Orthopt. 2, p. 57 (1876); Brunn. v. W. Monogr. der Phaneropt. p. 267. 3.

Hab. NORTH AMERICA, Georgia, Texas.]

6. **Amblycorypha parvipennis,** Stål.

Amblycorypha parvipennis, Stål, Obs. Orthopt. 2, p. 58 (1876); Brunn. v. W. Monogr. der Phaneropt. p. 268. 4, t. 6. fig. 81.

Hab. NORTH AMERICA, Texas.]

[7. **Amblycorypha rotundifolia,** Scudd.

Phylloptera rotundifolia, Scudd. Bost. Journ. Nat. Hist. vii. p. 445 (1862).
Amblycorypha rotundifolia, Brunn. v. W. Monogr. der Phaneropt. p. 268. 5.
Phylloptera oblongifolia, Harris, Treatise on Ins. injur. to Veget. p. 159, fig. 75 (fig. only) (ed. 1862).

Hab. NORTH AMERICA, Carolina, Georgia, &c.]

PARAGENES *, gen. nov.

Anepsia, Brunner v. W. Monogr. der Phaneropt. p. 269 (1878) (nomen præocc.: Koch, 1871).

This genus chiefly differs from *Amblycorypha* in having the mesosternal lobes very short, often rounded, the apex of the vertex less inclined towards the forehead and sulcate, and the ovipositor short and suddenly curved at its base, with the superior margin straight and finely crenulate, not armed with strong teeth.

The known species are all from Central America.

Synopsis specierum.

a. Verticis rostrum latum, obsolete sulcatum.

b. Elytra ovata, margine postico et antico æquilater arcuatis. Vena media in apice elytri excurrens.—1. *mexicana,* Sss.

bb. Elytra margine postico quam anticus saltem dimidia parte apicali magis arcuato. Vena media in margine postico elytri excurrens.

c. Statura minuta.—2. *ovata,* Brunn.

cc. Statura media. Elytra apice anguste rotundata.—3. *conspersa,* Brunn.

aa. Verticis rostrum minus latum, quadratum, utrinque prominulum, basi crasse profunde sulcatum, vel basi puncto impresso vel fere complete profunde sulcatum, apice tamen integro. Elytra apice latius rotundata, fusco-maculata.—4. *tessellata,* Brunn.

1. **Paragenes mexicana,** Sauss. (Tab. XVI. figg. 6, ♀; 6 *a*, ♂.)

Phylloptera (*Orophus*) *mexicana,* Sauss. Rev. et Mag. Zool. (2) xi. p. 204 (1859).

Anepsia mexicana, Brunn. v. W. Monogr. der Phaneropt. p. 271. 4.

Species minuta, viridis. Oculi valde elliptici. Pronotum canthis acutissimis, leviter sinuatis. Elytra regulariter ovata, margine anteriore et posteriore æqualiter arcuatis, apice acuminato-parabolico; superficie, præsertim in campo discoidali, punctis albis vel fuscis callosisque subtuberculiformibus conspersa. Vena media ante medium oriens, in medio furcata, apice haud deflexa, ejus ramus anterior frequenter iterum furcatus, ad apicem elytri excurrens (fig. 6), vel haud furcatus, ac vena discoidali ramum ad apicem elytri emittens. Alarum campus anterior apice minus acutus quam in *P. conspersa* et *P. tessellata*, vena ulnari 3–4-ramosa. Femora anteriora et intermedia margine antico dentibus remotis obsoletis armata; postica in utroque margine spinulosa.

♀. Ovipositor illo *P. ovatæ* simillimus.

♂. Cerci apice incurvo, acuto. Lamina infra-genitalis tricarinata, angulis spiniformibus.

Var. *a*. Elytrorum maculæ nigro-cinctæ.—*b*. Color fulvo-testaceus; elytrorum maculis brunneis; antennis remote fusco-annulatis.—*c*. Femorum spinulæ fuscæ.

♀. Long. corp. 19; pronot. 4·5; elytr. 29·5, lat. 10; femor. post. 24; ovipos. 5·5.

♂. Long. corp. 14·5; pronot. 3·7; elytr. 20·5, lat. 8·6; femor. post. 20 millim.

Figures:—Fig. 6, the female insect.—Fig. 6 *a*, part of the male insect.

Hab. Mexico (*Saussure*), Orizaba (*H. H. Smith & F. D. G.*); Costa Rica, Caché, Rio Sucio, and San Francisco (*Rogers*), San José, Azahar de Cartago (*Biolley*), Monte Retondo (*Tristan*).

* παραγενής, specie vel origine subsimilis.

This species is larger than *P. ovata* and smaller than *P. conspersa*, from both of which it differs in its narrower and regularly elliptic elytra, their hind margin less curved. The hind femora are usually more or less spinose beneath, sometimes nearly unarmed.

Obs.—A female specimen presents a curious monstrosity: the right hind femur bears on its middle the rudiments of a small hind leg, consisting of the end of an imperfectly formed femur, a tibia, and a four-jointed tarsus.

2. **Paragenes ovata,** Brunn. (Tab. XVI. fig. 5, ♀.)

Anepsia ovata, Brunn. v. W. Monogr. der Phaneropt. p. 271. 3 (♂).

P. mexicanæ simillima at minor. Viridis vel fulvo-testacea. Pronoti canthi recti. Elytra paulo latiora, margine postico quam margo anticus magis arcuato, apice obtusiore; vena media furcata, apice leviter deflexa, ad marginem posticum excurrens, apicem elytri haud attingente, nisi per varietatem (fig. 5). Alarum campus anterior minus acutus.

♀. Ovipositor quam in *P. mexicana* latior, margine supero toto, infero apice, valde denticulato.

♂. Partes anales illis *P. mexicanæ* conformes.

Var. In individuis nonnullis fulvescentibus elytra obsolete fusco-maculata.

♀. Long. corp. 20·5; pronot. 4·5; elytr. 22·6, lat. 8·5; femor. post. 22; ovipos. 5·4 millim.

♂. Long. corp. 15·5; pronot. 4; elytr. 22·6, lat. 8·5; femor. post. 18·5 millim.

FIGURE.—Fig. 5, the female insect. (The lateral lobes of the pronotum are rounded, not square as in the figure, spoilt by reproduction on the stone.)

Hab. GUATEMALA, San Gerónimo (*Champion*); COSTA RICA (*Biolley*), Rio Sucio, Caché, Volcan de Irazu (*Rogers*).

3. **Paragenes conspersa,** Brunn.

Anepsia conspersa, Brunn. v. W. Monogr. der Phaneropt. p. 270.

Var. *a.* Tota viridis; elytris punctis minimis raris conspersis; ♂ elytrorum campo anali plus minus infuscato.—*b.* In desiccatis elytra flavida, punctis numerosis fuscis conspersa, brunneo-reticulosa.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA; COSTA RICA, San José, La Uruca, El Coronal, Tucurriqui, La Palma, Turrialba, Monte Retondo (*Tristan*); PANAMA, Volcan de Chiriqui, Bugaba (*Champion*).

4. **Paragenes tessellata,** Sauss.

Phylloptera (*Orophus*) *tessellata,* Sauss. Rev. et Mag. Zool. (2) xiii. p. 129 (1861).

Anepsia tessellata, Brunn. v. W. Monogr. der Phaneropt. p. 270. 1, t. 6. fig. 82.

Anepsia tessellata, subsp. *obtusa,* Griffini, Bollet. dei Mus. di Zool. di Torino, xi. no. 232, p. 7 (1896).

Var. *a.* Tota pallide viridis. Elytris punctis minutis brunneis rarioribus conspersa. Spinulæ femorum prasinæ, ad basin maculis brunneis minutis notatæ.—*b.* Elytra punctis et maculis fuscis conspersa, alterisque albo-callosis conspersa. Pedes rufo-punctati, spinis femorum fuscis, ad basin macula fusca.—*c.* Tota fulvescens, fusco-punctata et maculosa.—*d.* Tota fulvescens, antennis pallide annulatis. Elytrorum apex paulum variabilis, plus minus obtusus.—*e.* Lamina infra-genitalis stylis brevissimis.—*f.* Stylis longis.—*g.* Lamina infra-genitalis ovata, apice minute truncata.—*h.* Lamina infra-genitalis brevis, apice minute incisa.—*i.* Pronotum breviusculum.—*k.* Elytra in quiete regulariter elliptica, margine supero quam inferus haud magis arcuato.

Hab. MEXICO, Oaxaca (*Saussure*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Lanquin, San Juan, Purula, and San Gerónimo in Vera Paz, Zapote (*Champion*); COSTA RICA, Volcan de Irazu, Caché (*Rogers*), Santa Clara (*Biolley*); PANAMA, Bugaba (*Champion*), Isthmus of Darien (*Griffini*).

This species is very variable in colour, from leaf-green, with one or two spots only on the elytra, to pale testaceous and fuscous, with infinitely various brown spots, ocellæ, maculæ, or tessellations, imitating shrivelled or dead leaves.—Signor Griffini has described as a subspecies a variety of the colour of a dead leaf, much punctate and variegated with testaceous, and having the lateral ridges of the pronotum somewhat obtuse.

Group **ANAULACOMERITES.**

Anaulacomeræ, Brunner v. W. Monogr. der Phaneropt. p. 277.

ANAULACOMERA *, Stål.

Anaulacomera, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 41 (1873); Recens. Orthopt. 2, p. 57; Brunner v. W. Monogr. der Phaneropt. p. 277. 35.
Furnia, Stål, Obs. Orthopt. 2, p. 57 (1876).

In this genus the tympanum of the males is generally well formed in the left elytron. The two axillary veins (*vena plicata*, Brunn.) are much elevated, forming together an acute angle. The two post-axillary veins, also prominent, do not unite together in an acute angle, but are longitudinal. The post-axillary area is closed posteriorly by a transverse or oblique vein, so that this area instead of being triangular is more elongate-trapezoidal (sometimes opened and reticulated posteriorly, or variable); it is often divided by a transverse oblique vein. The tympanum of the right elytron is more or less coriaceous.

Synopsis specierum.

a. Verticis rostrum apice compressum, attenuatum vel anguste parallelum, subtus cum fastigio frontis acuminatim contiguum.
  b. Frons utrinque longitudinaliter impressa, canaliculata, itaque utrinque subcarinata. Statura major.
    c. Femora postica longitudinem dimidiam elytrorum parum superantia. Femora intermedia subtus rarissime spinulosa. Elytra densissime reticulata, margine suturali arcuato. Cerci ♂ valde incrassati, chelati, spina armati.—[1. *angustifolia*, Sss.]

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* Species hujus generis sunt numerosæ et difficillimæ. Multo facilius inter se mares quam feminæ distinguuntur: itaque femina quæque, si dubia sit species, mari suo de visu conferatur, eoque modo et auxilio judicetur.

cc. Femora postica duas tertias partes elytrorum superantia. Femora antica et intermedia subtus spinulosa. Tibiæ anticæ circum foramina nigro-maculatæ. Elytra late elevato-reticulata, fusco-punctata. Cerci ♂ integri, latere interno excavati.—[2. *erinifolia*, Sss.]

bb. Frons utrinque haud vel obsolete impressa, itaque haud bicarinata. Statura minor. (Elytra angusta.) Apex verticis nodosus. (Lamina infra-genitalis ♀ profunde emarginata, in lobos angustos producta.) Ovipositor margine superiore medio angulatim fracto.—3. *furcata*, Brunn.

aa. Verticis rostrum basi constrictum, apice nodoso-tumidum, obtusum, subtus cum fastigio frontis lineolatim vel rotundatim contiguum.

b. Elytra angusta, margine suturali recto.

c. Canthi laterales pronoti acuti; lobi laterales æque longi ac lati. Oculi trigonali-rotundati. Cerci ♂ difformes, longissimi, spina longa armati.—4. *darwini*, Scudd.

cc. Canthi laterales pronoti rotundati; lobi laterales longiores quam altiores. Oculi globosi. Cerci ♂ teretes.

d. Verticis apex quam primus articulus antennarum angustior.

e. Cerci ♂ spina interna mediana sola armati.—[5. *dentata*, Brunn.]

ee. Cerci ♂ integri, apice obtusi.

f. Feminæ cognitæ.

g. Ovipositor ♀ longus, parum arcuatus, ultra medium attenuatus, apice valde denticulatus.—6. *recticauda*, sp. n.

gg. Ovipositor ♀ in medio valde arcuatus. Cerci ♂ longi, apice incurvi, modice incrassati.

h. Lobi laterales pronoti æque alti ac lati. Cerci ♂ valde arcuati.—7. *laticauda*, Brunn.

hh. Lobi laterales pronoti paulo longiores quam altiores. Cerci ♂ parum incurvi.—8. *lativertex*, Brunn.

ff. Feminæ ignotæ. Cerci ♂ teretes, leviter arcuati, apice attenuati.—[9. *angustipennis*, sp. n.]

dd. Verticis apex primo articulo antennarum subæquilatus. Ovipositor ♀ longus, valde denticulatus. Cerci ♂ longi, teretes, apice denticulati.—10. *denticauda*, sp. n.

bb. Elytra ante medium latissima, apicem versus angustata, margine suturali arcuato. Femora postica subtus inermia. Statura minor.—[11. *inermis*, Brunn.]

[1. **Anaulacomera angustifolia**, Sauss. (Tab. XVI. figg. 7–10.)

Phylloptera angustifolia, Sauss. Rev. et Mag. Zool. (2) xi. p. 202 (♂ ♀) (1859).

Anaulacomera angustifolia, Brunn. v. W. Monogr. der Phaneropt. p. 281. 2.

FIGURES :—Fig. 7, the anterior part of the male insect, magnified.—Fig. 7 *a*, ditto, natural size.—Fig. 8, ditto, the pronotum, elytron, and wing.—Fig. 9, the end of the male abdomen, from beneath.—Fig. 10, the end of the female abdomen.

Hab. BRAZIL, Bahia.]

[2. **Anaulacomera erinifolia,** Sauss. (Tab. XVI. figg. 11, 12.)

Phylloptera erinifolia, Sauss. Rev. et Mag. Zool. (2) xi. p. 203 (♂) (1859).

Anaulacomera erinifolia, Brunn. v. W. Monogr. der Pheneropt. p. 283. 6.

Anaulacomera opacifolia, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 43; Recens. Orthopt. 2, p. 36.

Elytra latissime irregulariter reticulata, areolis maximis polygonalibus, venis prominulis; in areolis grandibus irregulariter venosa et reticulata.

♀. Long. corp. 22; pronot. 5; elytr. 31, lat. in med. 8·6; femor. post. . . .?; ovipos. 10 millim.

♂. Long. corp. 20; pronot. 6; elytr. 34, lat. in med. 8; femor. post. 21·2 millim.

FIGURES:—Fig. 11, the insect, in profile.—Fig. 12, the head from above.

Hab. BRAZIL, Bahia.]

3. **Anaulacomera furcata,** Brunn.

Anaulacomera furcata, Brunn. v. W. Monogr. der Phaneropt. p. 287. 12.

♀. "Viridis. Fastigium verticis valde compressum, non sulcatum, apice nodosum. Pronotum lobis deflexis rotundatim insertis, longioribus quam altioribus, margine inferiore toto regulariter semicirculariter rotundato. Elytra longiuscula, venis rectis, ramo radiali longe pone medium furcato, ramulo superiore denuo furcato. Pedes antici et intermedii? Femora postica subtus pone medium in utroque margine spinulosa. Ovipositor pronoto duplo longior, margine inferiore semicirculariter incurvo, apice dentato-serrato, margine superiore medio angulatim fracto, apice subtilissime crenulato. Lamina subgenitalis ♀ profunde emarginata, lobis lanceolatis, acuminatis."

Long. corp. 14; pronot. 3; elytr. 22, lat. in medio 4; femor. post. 14; ovipos. 7 millim.

Hab. PANAMA.

4. **Anaulacomera darwini,** Scudd.

Anaulacomera darwinii, Scudd. Bull. Mus. Comp. Zoöl. Harv. Coll. xxv. p. 19, t. 3. figg. 1 (♀), 4, 5 (♂) (1893).

Anaulacomera darwini, subsp. *darienica,* Griffini, Bollet. dei Mus. di Zool. di Torino, xi. no. 232, p. 5 (1896).

Viridis. Fronte palpisque luteis. Oculi haud parvi. Rostrum verticis compressum, sulcatum, utrinque sinuatum, apice tumido-rotundatum, cum fastigio frontis lineola subcontiguum. Pronotum supra planum, margine antico recto, postico rotundato, disco impressionibus consuetis notato, canthis subacutis, pallidioribus; lobi laterales æque longi ac lati. Elytra angusta, subpellucida, parallela, margine postico recto, confertim venulosa; vena media sensim ante medium furcata. Meso- et metasternum rotundatim lobata. Femora subtus: anteriora margine antico spinulis 1–3, intermedia 3–8; postica spinulis 4 : 5. Tibiæ anticæ supra spinulis 1–2, intermediæ supra inermes. Abdomen fusco-punctulatum.

♀. Elytrorum campus analis dexter punctulo fusco-notatus. Ovipositor pronoto subduplo longior, modice latus, subrectus, obsolete punctato-rugulosus, in dimidia parte apicali subtilissime serrulatus.

♂. Tympanum dextrum pellucidum, intus parum fusco-marginatum; sinistrum fusco-nigrum. Segmentum anale truncatum, margine postico supra leviter concavo. Lamina supra-analis in lobum sat longum, teretem, apice crassiusculum, leviter impressum carinulatumque producta. Cerci abnorme longi, teretes, recti, basi lævissime incurvi, in quarta parte apicali spinam longam externam, sursum vergentem, compressiusculam emittentes; pars apicalis compressiuscula, intus sulcata, apice ipso tuberculata, extus appendiculo spiraliter contorto instructo. Lamina infra-genitalis incisa.

♀. Long. corp. 17·5; pronot. 4; elytr. 25·5, lat. 4; femor. post. 15·8; ovipos. 9 millim.

♂. Long. corp. 13; pronot. 3·5; elytr. 20·5, lat. 3·5; femor. post. 12·8; cerci 8 millim.

Hab. COLOMBIA, Isthmus of Darien.—GALAPAGOS Is.

Signor Griffini distinguishes his specimens from the Isthmus of Darien as somewhat

different from those from the Galapagos Islands, principally by the form of the male cerci.

[5. **Anaulacomera dentata,** Brunn.

Anaulacomera dentata, Brunn. v. W. Monogr. der Phaneropt. p. 290. 18.

" Pallide virescens. Fastigium verticis basi bituberculatum, apice valde obtusum, cum fastigio frontis lineola transversa contiguum. Pronotum disco subconcavo, lobis deflexis rotundatim insertis, æque altis ac longis. Elytra ramo radiali (vena media) ante medium oriente, campo tympanali in ♂ latiusculo, infuscato. Femora antica subtus in margine antico punctis sanguineis alineatis, spinulis nullis instructa. Femora postica subtus in utroque margine spinulosa. Lamina supra-analis ♂ angusta, triangularis, obtusa. Cerci ♂ sensim incurvi, teretes, apice acuminati, medio spina interna armati. Lamina subgenitalis ♂ ampla, apice rotundatim emarginata, lobis teretibus, stylos imitantibus, ♂ ."

Hab. COLOMBIA.]

6. **Anaulacomera recticauda,** sp. n. (Tab. XVI. fig. 13, ♀ .)

♀. Dilute virescens. Rostrum verticis breve, in medio valde constrictum, sulcatum, bicarinatum, basi bituberculatum, apice supra divisum, minute bituberculatum, antice rotundatum. Fastigium frontis subparallelum, latiuscule truncatum per lineam transversam cum vertice conjunctum, primo articulo antennarum fere æquilatum, haud tuberculatum, ocello magno. Pronotum antice subfornicatum, postice planum; canthis lateralibus nullis. Lobi laterales paulo longiores quam altiores, antice subangulati. Elytra modice longa, quam longitudo pronoti paulo latiora, dense reticulata, margine suturali recto; vena media in medio oriens, apice furcata; vena ulnari recta, apice subito incurva; campo marginali oblique venoso. Femora antica et intermedia margine antico spinuloso. Femora postica dimidia parte apicali linearia, apice extus spinulis 3 : 4. Ovipositor dimidiam longitudinem femoris posticis æquans, vel leviter superans, subrectus, parallelus, ultra medium haud dilatatus, rugulosus, confertim rugose punctatus, marginibus lævissime arcuatis, apice binis valvis fortiter crenatis; margine superiore in $\frac{3}{4}$ basalibus leviter subsinuato, dehinc recto, rotundato-crenato, margine infero crassius et acutius denticulato. Lamina infra-genitalis trigonalis, carinata, truncata.

♀. Long. corp. 19; pronot. 5; elytr. 25, lat. 5; femor. post. 17; ovipos. 9 millim.

Hab. MEXICO, Acapulco in Guerrero (*H. H. Smith*).

In this species the apex of the vertex seen from above is very short, not compressed, and its carinulæ are shaped thus,)(, their extremities terminating in a small rounded tubercle. The ovipositor is very rough and its superior margin becomes straight at the end to form the acute apex, while in *A. laticauda* the superior margin is curved up to the apex.

7. **Anaulacomera laticauda,** Brunn. (Tab. XVI. fig. 14, ♀ .)

Anaulacomera laticauda, Brunn. v. W. Monogr. der Phaneropt. p. 292. 21.

Dilute viridis. Rostrum verticis sulcatum, bicarinatum, carinis basi trigonali-divergentibus, apice truncatum, obtusum, antice rotundatum, nitidum. Fastigium frontis cum illo rotundatim contiguum. Pronotum supra planum, canthis nullis; lobi laterales paulo longiores quam altiores, margine postico toto arcuato. Elytra longiuscula, longitudine pronoti sensim latiora, sat dense reticulata, nodulis minutis instructa, apice latiuscula arcolata hyalinescentia. Vena media paulo ante medium oriens, ultra medium furcata. Femora omnia sanguineo-punctata, antica subtus apice bispinulosa vel mutica; postica subspinulosa. Tibiæ anticæ concolores.

Var. *a*. Elytra punctis sanguineis conspersa.—*b*. Punctulis nigris raris adspersa.—*c*. Nodulis et punctis nullis; pedibus immaculatis.

♀. Ovipositor modice longus, parum arcuatus, lævigatus, ultra medium subdilatatus, margine supero subrecto, apice subtilissime serrulato, infero in tertia parte distali crenato. Lamina infra-genitalis triangularis.

♂. Elytrorum campus tympanalis sinister area post-axillari frequenter retro-aperta, per venulam oblique transversam divisa; vena post-axillari externa sigmoidali, interna incrassata. Lamina supra-analis, linguliformis, crasse sulcata. Cerci teretes, semi-circulariter incurvi, vel tantum arcuati, apice lævissime clavati, subacuminati. Lamina infra-genitalis medio et utrinque carinata, brevis, apice sinuata, utrinque lobum acutum brevem formans (vel truncata). Campus tympanalis elytrorum coriaceus; ille elytri dextri ad marginem suturalem areolis vitreis 3–4.

Var. ? ♂. Verticis rostrum breve, apice nodosum, ante apicem constrictum, brevissime sulcatum. Elytrorum campus discoidalis pone venam principalem, ad basin venularum nodulis concoloribus 4–5 notatus.

♀. Long. corp. 20–23; pronot. 4·5; elytr. 28; femor. post. 19; ovipos. 8 millim.

♂. Long. corp. 15; pronot. 4·5; elytr. 26; femor. post. 17 millim.

FIGURE.—Fig. 13, the end of the abdomen of the female, magnified.

Hab. MEXICO, Orizaba (*Brunner*), San Lorenzo near Cordova (*M. Trujillo*), Teapa in Tabasco (*H. H. Smith*), Valladolid in Yucatan (*Gaumer*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Teleman and El Jicaro in Vera Paz, Zapote (*Champion*); PANAMA, Bugaba, David (*Champion*).—COLOMBIA.

Differs from *A. nodulosa*, of Guiana, in its rather long wings and somewhat shorter ovipositor, the latter being a little dilated at or beyond the middle and very finely crenulated (*Brunner*).

A. laticauda is also nearly allied to *A. lativertex*, several individuals from Chiriqui and Tabasco approaching it very closely, these having the apex of the vertex somewhat broader than in the type, but still narrower than the first joint of the antennæ.

8. **Anaulacomera lativertex,** Brunn.

Anaulacomera lativertex, Brunn. v. W. Monogr. der Phaneropt. p. 292. 22.

A. laticaudæ simillima. Dilute viridis. Verticis rostrum quam in *A. laticauda* longius, sulcatum, bicarinatum, in medio subconstrictum, apice truncatum, quam primus articulus antennarum haud angustius. Fastigium frontis superne rotundatum. Pronotum supra planum, canthis nullis. Lobi laterales longiores quam altiores, margine antico et postico rotundato. Elytra elongata, angusta, longitudine pronoti ♀ latiora, densissime reticulata, sed in parte distali et campo marginali latiuscule areolata, pellucida; vena media pone medium furcata; vena ulnari nonnunquam undulata. Femora antica et intermedia subtus inermia. Femora postica gracillima, parte lineari quam pars basalis longiore; subtus in utroque margine spinulosa.

♀. Ovipositor in medio haud dilatatus.

♂. Campus tympanalis elytrorum rufescens. Lamina supra-analis deflexa, elongato-trigonalis, sulcata. Cerci parum arcuati, apice subclavati.

♂. Long. corp. 14; pronot. 4·5; elytr. 27, lat. 5; femor. post. 17 millim.

Hab. PANAMA, Chiriqui.—COLOMBIA, Bogota.

[9. **Anaulacomera angustipennis,** sp. n.

♂. Parva; viridis. Frons inferius antice utrinque carinulata, fastigio dentiformi. Verticis rostrum breve, constrictum, apice nodoso, subsulcato. Pronoti canthi nulli, lobis lateralibus distinctissime longioribus

quam latioribus. Elytra angustissima, latiuscule elevato-reticulata, areis grandibus inter venas nullis. Campo marginali hyalino, viridi-reticulato; vena media ante medium oriente, fere a basi furcata, ramisque frequenter apice furcatis. Elytra nonnunquam macula vel maculis 2 adventivis rufescentibus. Femora anteriora subtus inermia; femora postica gracillima in $\frac{3}{5}$ longitudine linearia, apicem elytrorum haud attingentia, subtus margine externo spinulis 1–3 armato. Campus tympanalis sinister ♂ venis prominulis, venis 2 postaxillaribus arcuatis; area postaxillari propterea in medio coarctata, postice vix attenuata, per venam transversam clausa. Lamina supra-analis trigonalis, deflexa, sulcata. Cerci teretes, leviter arcuati, apice attenuati, obtusi, unguiculo brevissimo terminati. Lamina infra-genitalis apice sinuata, angulis leviter prominulis.

♂. Long. corp. 13; pronot. 3·5; elytr. 23, lat. 3; femor. post. 16 millim.

Hab. GUIANA, Cayenne.

The large cells formed by the transverse nervures are obliterated between the longitudinal veins of the elytra, except in a portion of the ulnar area, in which they are oblique; but the secondary reticulation is distinct and much elevated, giving a rough appearance to the surface. The hind femora reach to beyond three-fourths of the length of the elytra. This species seems to resemble *A. diluta*, Brunner, but the forehead is carinated. In the synopsis of this author it would follow *A. concisa*.]

10. **Anaulacomera denticauda,** sp. n. (Tab. XVI. figg. 15, 16, ♀.)

Minor, *A. recticaudæ* statura. Verticis rostrum breve, in medio valde constrictum, antice nodosum, subsulcatum, ab antico orbiculare, postice breviter **V**-formiter elevatum vel potius bituberculatum. Fastigium frontis primo articulo antennarum æquilatum, supra truncatum. Pronotum supra planum; canthis nullis; lobis lateralibus fere æque altis ac longis, margine postico parum arcuato. Elytra modice longa, dense reticulata, in campo marginali et apice latius areolata; vena media in medio oriente, ante medium furcata. Vena ulnaris recta. Femora antica et intermedia subtus inermia vel spinulis minimis punctiformibus prædita. Femora postica tantum dimidia parte apicali lineari; subtus spinulis minimis 2 : 3 armata.

Var. Femora postica in dimidia parte apicali spinulis utrinque nonnullis.

♀. Ovipositor valde elongatus, subrectus, fere $\frac{2}{3}$ femoris postici æquans, in tertia parte apicali leviter dilatatus, apice fortissime acute denticulatus.

♂. Elytri sinistri tympanum illo *A. laticaudæ* sat similis; vena stridulante et postaxillari interna crassissimis, externa longitudinali. Segmentum anale truncatum, trigonali impressum. Lamina supra-analis elongata, deflexa, lanceolata, sulcato-excavata. Cerci longi, graciles, levissime arcuati, teretes, haud sulcati, apice vix incrassato, haud recurvo, ungue minimo armato; ante apicem intus denticulis fuscis minimis 1 vel 2 instructi. Lamina infra-genitalis 3-carinata, apice angusta, truncata, angulis haud productis (stylis vix ullis instructa?).

♀. Long. corp. 18; pronot. 4; elytr. 22, lat. 5; femor. post. 16; ovipos. 11 millim.

♂. Long. corp. 15; pronot. 4; elytr. 21, lat. 5; femor. post. 16 millim.

FIGURES :—Fig. 15, the female insect.—Fig. 16, the end of its ovipositor, magnified.

Hab. MEXICO, Temax in N. Yucatan (*Gaumer*).

[11. **Anaulacomera inermis,** Brunn.

Anaulacomera inermis, Brunn. v. W. Monogr. der Phaneropt. p. 297. 30.

♂. "Viridis. Fastigium verticis breve, sulcatum, articulo primo antennarum æque latum, cum fastigio frontis lineola contiguum. Pronotum disco plano, lobis deflexis longioribus quam altioribus. Elytra lanceolata, margine postico rotundato, venis rectis, ramo radiali (vena media) biramuloso. Femora omnia

sanguineo-conspersa, subtus teretia, inermia. Tibiæ intermediæ supra inermes. Segmentum anale ♂ truncatum. Cerci ♂ teretes, longiusculi, incurvi, apice obtusi. Lamina subgenitalis ♂ brevis, non attenuata, latere carinata, margine postico triangulariter emarginato, lobis triangularibus."

♂. Long. corp. 14; pronot. 4; elytr. 19, lat. 4·5; femor. post. 14 millim.

Hab. COLOMBIA, Ubaque.]

Group **CTENOPHLEBIITES.**

Ctenophlebiæ, Brunner v. W. Monogr. der Phaneropt. p. 299.

CTENOPHLEBIA, Stål.

Phylloptera, Burmeister, Handb. d. Ent. ii. p. 693 (1835) (partim).
Ctenophlebia, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 41 (1873); Recens. Orthopt. 2, p. 17; Brunner v. W. Monogr. der Phaneropt. p. 301.

Synopsis specierum.

a. Elytra recta, elliptico-rhomboidalia, subsymmetrica; margine suturali arcuato; vena principali parum incurva; campo marginali ultra medium attenuato. (Species Americæ meridionali propriæ.)

aa. Elytra asymmetrica; margine costali ultra medium valde incurvo; margine suturali recto; vena principali ultra medium apice valde incurva; campo marginali ultra medium latissimo.

b. Vena principalis ramos 3 ad marginem posticum elytri emittens.

c. Campus marginalis elytri in tertia parte apicali quam in medio latior.

d. Elytra ♀ ♂ modice lata, margine costali apice subrecto vel arcuato. Verticis rostrum a supero visum triangulare, obtusiusculum, sulcatum. Cerci ♂ valde incurvi, apice haud dilatati.—[*peruviana,* Brunn. (Peru).]

dd. Elytra ♀ ♂ latissima, margine costali apice subsinuato vel subrecto. Verticis rostrum lamellari-compressum. Cerci ♂ elongati, arcuati, apice tumidi, truncati. —1. *azteca,* sp. n.

cc. Campus marginalis elytri in medio, et ultra medium æque latus. Verticis rostrum compressum.

d. Lamina infra-genitalis ♂ brevis, attenuata, margine postico emarginato.—2. *zetterstedti,* Stål.

dd. Lamina infra-genitalis ♂ elongata, apice furcata.—3. *foreli,* sp. n.

bb. Vena principalis elytri ramos 5 ad marginem posticum emittens.—[*multiramosa,* Brunn. (Brazil).]

1. **Ctenophlebia azteca,** sp. n. (Tab. XVI. figg. 17–19.)

Læte viridis. Verticis rostrum lamellari-compressum, apice leviter incrassatum, basi subconstrictum (variat tamen haud constrictum, apice haud incrassatum). Articulus primus antennarum basi intus compresso-gibbosus; secundus basi tuberculis 2 minutis rufis instructus. Pronoti discus planus, subconcavus, parallelus, margine postice arcuato; lobi laterales altiores quam latiores, infra rotundati, antice haud oblique truncati. Elytra latissima, ante tertiam partem apicalem latiora, margine costali ultra medium

maxime arcuato dehinc recto vel leviter sinuato; margo suturali subrecto. Vena principalis recta, apice valde incurva; ramos discoidales tres obliquos emittens, tertia ad apicem elytri attingens; ramosque costales 7–8, alterosque minutos apicales gerens. Alæ apice acutæ. Femora antica et intermedia margine antico, femora postica margine externo, nonnunquam spinulis nonnullis armata.

♀. Ovipositor pronoto duplo longior, basi subito incurvus dehinc vix arcuatus, apice hebetato, margine infero apice subtilissime vel vix crenulato, margine supero plus quam dimidia parte apicali subcrenulato. Lamina infra-genitalis trigonalis, incisa.

♂. Lamina supra-analis elongata, sulcata, apice crassa, rotundata, subsinuata. Lamina infra-genitalis lata, plana, triangularis, apice leviter producta, bicarinata, obtusangulatim incisa, marginibus lateralibus sinuatis. Cerci longissimi, arcuati, teretes, apice subito tumido, tumefactione cylindrica, breviter crasse infundibuliformi, suboblique truncata, facie apicali orbiculari, margine externo semiorbiculari, acuto, denticulis fuscis crenulato.

♀. Long. corp. 18; pronot. 5; elytr. 31·5, lat. 15; femor. post. 17; ovipos. 9·5 millim.

♂. Long. corp. 17; pronot. 5·5; elytr. 31, lat. 14; femor. post. 15 millim.

FIGURES:—Fig. 17, the female insect.—Fig. 18, the end of the male abdomen from above, showing the cerci.—Fig. 19, ditto, in profile.

Hab. MEXICO, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

This species is very like *C. peruviana*, but it is larger and has more dilated elytra; and the apex of the vertex is in the shape of an obtuse triangle produced into a compressed lamella before the ocelli, while in *C. peruviana* it is but little compressed. In the last-mentioned insect the lateral lobes of the pronotum are shorter and wider than in *C. azteca*, as broad as high, with the inferior margin anteriorly obliquely truncated; and the ovipositor is longer, it being two and half times the length of the pronotum. The cerci of the male are very characteristic in form in the present species, the lamina infra-genitalis being wide, in the shape of a mitre, terminated by two short triangular lobes; and the femora are not spinose.

2. **Ctenophlebia zetterstedti,** Stål.

Phylloptera zetterstedti, Stål, Orthopt. Freg. Eug. Resa, p. 322 (1860).

Ctenophlebia zetterstedti, Stål, Recens. Orthopt. 2, p. 37; Brunn. v. W. Monogr. der Phaneropt. p. 304, t. 6. fig. 88.

"Flavo-viridis, pedibus flavis. Fastigium verticis laminatim elevatum. Pronotum disco plano, margine postico triangulari. Elytra latissima, rhomboidea, margine antico pone medium semicirculariter rotundato, margine postico pone medium recto. Vena radialis (principalis) apice valde curvata, ramos 7 furcatos in marginem anticum, necnon ramos 3 rectos, indivisos, excepto ultimo furcato, in marginem posticum elytri emittens. Lamina supra-analis ♂ triangularis, longiuscula, apice obtusa, medio sulcata. Cerci ♂ longissimi, teretes, apice incurvi et bicipes. Lamina subgenitalis ♂ brevis, attenuata, bicarinata, margine postico emarginato. Ovipositor parum incurvus, pronoti longitudinem triplicem subattingens, acuminatus, apice subtilissime crenulatus. Lamina subgenitalis ♀ triangularis, obtusa, brevissima."

♀. Long. corp. 18; pronot. 5; elytr. 34, lat. 14; femor. post. 16; ovipos. 11 millim.

♂. Long. corp. 17; pronot. 4·5; elytr. 24, lat. 12; femor. post. 15 millim.

Hab. PANAMA (*Brunner*).—COLOMBIA; ECUADOR, Puna.

[3. **Ctenophlebia foreli,** sp. n.

♂. Tota prasina. Rostrum verticis lamellari-compressum, apice a latere rotundatum. Antennarum articulus secundus subtus basi impressione punctiformi notatus. Pronotum supra planum, margine postico angulato-rotundato; ejus lobi laterales paulo altiores quam latiores, subsymmetrice rotundati; margine infero toto valde arcuato, anterius nec sinuato nec oblique truncato. Elytra ultra medium latissima, margine antico in parte proximali subarcuato, dehinc valde arcuato, in tertia parte apicali fere recto, haud sinuato; margine postico recto. Vena discoidalis apice arcuata, minus fortiter deflexa quam in *C. peruviana*; ramos 6–7 apiceque ramulos minutos ad marginem anteriorem emittens; necnon ramos 2 ad marginem suturalem alterumque furcatum ad apicem elytri emittens. Elytrorum reticulatio incompleta, coriacea, quam in *C. peruviana* minus densa ac irregularis; elytra itaque irregulariter translucida. Alæ apice acuminato-rotundatæ, campo anteriore apice coriaceo. Lamina supra-analis in medio producta, elongato-trigonalis, truncata. Cerci elongati, leviter arcuati, apice trigonaliter subacuminati, laminam infra-genitalem superantes. Lamina infra-genitalis elongata, subcarinata, parte apicali angusta, apice profunde incisa, furcata, processibus acutis.

♂. Long. corp. 16; pronot. 4; elytr. 25, lat. 10; femor. post. 13 millim.

Hab. COLOMBIA, Santa Marta (*Dr. A. Forel*).

In the allied *C. peruviana*, Brunn., the elytra are less rhomboidal than in the present species, their anterior margin being straight at the base and much more curved beyond the middle; the pronotum has the posterior margin transversely arcuated (instead of angular), and the anterior part of the inferior margin of the lateral lobes obliquely straightened, so as to form a distinct obtuse angle with the anterior margin; the infra-genital plate is not prolonged, but transverse, its hind margin forming a subacute angle; and the cerci are shorter, curved in the form of a **C**, and rounded at the tip.

C. foreli also nearly approaches *C. zetterstedti*, Brunn., but it has the anterior margin of the elytra less curved and the posterior margin not arcuated in its proximal half; the cerci of the male are not bimamillate at the tip, and the infra-genital plate is very different in shape.]

[TOMEOPHERA, Brunn.

Tomeophera, Brunner v. W. Monogr. der Phaneropt. p. 299.

1. **Tomeophera gladiatrix,** Brunn.

Tomeophera gladiatrix, Brunn. v. W. Monogr. der Phaneropt. p. 300. 1, t. 6. fig. 87.

Hab. COLOMBIA; PERU.]

Group **PHYLLOPTERITES.**

Phyllopteræ, Brunner v. W. Monogr. der Phaneropt. p. 307.

HYPERPHRONA, Brunn.

Hyperphrona, Brunner v. W. Monogr. der Phaneropt. p. 315; Additam. p. 163.

Differs from *Phyllopteræ* in having the lateral lobes of the pronotum as wide as they

are high (in *Phylloptera* they are narrower than high); their anterior margin is somewhat sinuated in both genera.

Obs.—The length of the hind femora relatively to that of the elytra, of the intermediate tibiæ to that of the pronotum, and of the ovipositor to that of the pronotum, must be exactly compared, these proportions being characteristic of the species.

Synopsis specierum.

a. Tympana tibiarum anticarum utrinque nuda. Articuli basales antennarum unicolores. Elytrorum latitudo $2\frac{1}{2}$ longitudinem pronoti æquans.

b. Ovipositor pronoto vix longior. Antennæ basi unicolores. Elytra nitida, vena media et vena ulnari apice incurvis; vena ulnari immaculata.—[1. *nitidipennis*, Stål.]

bb. Ovipositor pronoto sesqui-longior. Antennarum articulus secundus nigro-signatus. Elytra parum nitida.

c. Elytra maculis ornata:

d. maculis 2 nitidis, vel pallidis, nigro-cinctis, ac 3 minutis nigris.—[2. *prudhommi*, sp. n.]

dd. maculis 3 fusco-rufis obsoletis.—[3. *bidentata*, Brunn.]

cc. Elytra immaculata.—[4. *viridifolia*, sp. n.]

aa. Tibiarum anticarum tympanum internum conchatum, externum nudum. Articuli basales antennarum nigro-signati. Elytrorum latitudo $2\frac{1}{2}$ longitudinem pronoti æquans. Elytra maculis albis 3 circulariter fusco-circumscriptis ornata.

b. Articulus primus antennarum unicolor. Elytra in tertia parte apicali latissima; eorum maculæ 3 inter se æque remotæ.—5. *trimaculata*, Brunn.

bb. Articulus primus antennarum nigro-marginatus et nigro-punctatus. Elytra in medio latissima, eorum macula prima a binis alteris magis remota.—6. *irregularis*, Brunn.

[1. **Hyperphrona nitidipennis**, Stål.

Plagioptera nitidipennis, Stål, Recens. Orthopt. 2, p. 34 (1874).
Hyperphrona nitidipennis, Brunn. v. W. Monogr. der Phaneropt. p. 317. 2.

Hab. COLOMBIA.]

[2. **Hyperphrona prudhommi**, sp. n.

♀. Viridis. Antennarum primus articulus margine apicali interno nigro, secundo intus vitta nigra, tertio intus nigro. Verticis rostrum valde compressum. Frontis fastigium triangulare; carinæ infra-oculares parum prominulæ. Pronoti canthi laterales rotundati. Elytra tertia parte apicali latiora, maculis in vena ulnari 3 æque distantibus; prima majore orbiculari, læte viridi, nigro-cincta; secunda minuta, nigra; tertia modica, pallida, nigro-cincta; necnon maculis 2 minutis nigris in ramis venæ mediæ perspicuis; venæ transversæ campi discoidalis, plus minus viridi-nigrescentes vel nigro-punctatæ, in anastomosibus plus minus nigris; vena ulnaris recta. Vena media in medio vel paulo ante medium furcata; ejus ramus posterior in macula tertia cum vena ulnari confluens. Ovipositor quam pronotum haud duplo longior, concolor vel rufescens, crasse granulosus, apice crasse serratus, denticulis marginis superioris trigonalibus, parum acutis.

♀. Long. corp. 26; pronot. 5·5; elytr. 35·5, lat. 13; femor. post. 19·5; tib. interm. 9·6; ovipos. 9·5 millim.

Hab. GUIANA, Cayenne (*Prudhomme*).

This species somewhat resembles *H. trimaculata*, Brunn., in the maculation of the elytra, but differs from it in the longer ovipositor and in having the tympana of the tibiæ opened, not conchate.]

[3. **Hyperphrona bidentata,** Brunn.

Hyperphrona bidentata, Brunn. v. W. Monogr. der Phaneropt. p. 319. 6 (♂).

♀. Majuscula, viridis. Antennarum articuli basales nigro-striolati. Verticis rostrum compressum, sulcatum, angustissimum. Carinæ infra-oculares valde explicatæ. Pronoti canthi rotundati. Elytra latiuscula, margine postico regulariter arcuato. Vena media valde ante medium oriens, valde ultra medium furcata. Vena ulnaris cum ramo postico venæ mediæ per venulam brevem conjuncta, in origine ramorum maculis 3 purpureis notata. Campus dorsalis elytri dextri hyalinus, per venam longitudinalem crassam divisus ac reticulatus. Ovipositor pronoto sesqui-longior, crasse granulatus, supra crassissime crenatus, subtus apice minus fortiter denticulatus, rufescens, apice castaneus.

Long. corp. 24; pronot. 5·5; elytr. 38, lat. 13; tib. interm. 11·8; femor. post. 21·6; ovipos. 8 millim.

Hab. GUIANA, Cayenne (*Mus. Genavense*).]

[4. **Hyperphrona viridifolia,** sp. n.

♀. Viridis. Antennarum articulus primus margine apicali intus nigro, secundo intus macula nigra, articulis sequentibus linea nigra. Verticis rostrum minutum, compressum; carinæ infra-oculares condite explicatæ. Pronoti canthi rotundati. Elytra lata, margine postico magis arcuato. Elytra immaculata; vena ulnaris subrecta, apice rectangulatim deflexa. Ramus posterior venæ mediæ ad marginem posteriorem elytri percurrens, cum angulo venæ ulnaris per venulam brevem conjunctus. Campus dorsalis elytri dextri subhyalinus, per venam longitudinalem crassam divisus, intus perpendiculariter, extus retro-oblique venulosus sicut in *H. bidentata*. Vena media in medio vel paulo ante medium furcata. Ovipositor pronoto valde longior, crasse granulatus, apice superne crasse denticulatus, denticulis magna parte acutis, subtus apice crenatus, rufescens.

♀. Long. corp. 28; pronot. 6·6; elytr. 38, lat. 14; femor. post. 19·5; tib. interm. 9·8; ovipos. 9·6 millim.

Hab. GUIANA, Cayenne (*Prudhomme*).

Differs from *H. bidentata* in the relatively longer ovipositor (compared with the pronotum) and immaculate elytra; from *H. cærulescens* * by the longer ovipositor; and from *H. striolata* † by the intermediate tibiæ being not nearly twice the length of the pronotum.]

5. **Hyperphrona trimaculata,** Brunn. (Tab. XVI. figg. 20–24.)

Hyperphrona trimaculata, Brunn. v. W. Monogr. der Phaneropt. p. 318. 4.

Læte viridis, valde compressa. Articulus primus antennarum extus basi, secundus intus basi, puncto eburneo notati; flagellum rufescens. Verticis rostrum antice sublamellare, supra sulcatum. Frons convexa, supra triangulariter terminata, carinis lateralibus obsoletis. Pronotum supra sulcis distinctis et sulco longitudinali signatum; canthis complete rotundatis. Elytra ultra medium latissima, margine suturali arcuato, margine costali subrecto. Vena media longe ante medium oriens, tertia parte apicali furcata; vena ulnaris apice maxime recurva (ut Galli dicunt, *en zigzag*), et in ejus curvatione cum ramo venæ mediæ per venulam brevem conjuncta. Area ulnaris ad basin ramorum ulnarum maculis eburneis 3

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* *H. cærulescens*: pronot. 5; ovipositor 6·5 millim.

† *H. striolata*: tibiæ intermediæ longitudinem pronoti duplicem attingentes: pronotum ♀ 6·5 millim.

luteo-reticulatis ornata; rami ulnares utrinque punctis nigris confertis marginati; margo suturalis in parte basali et extus ad venam analem eodem modo plus minus fusco punctatus. Pedes graciles. Femora intermedia pronoto duplo longiora; femora postica $\frac{2}{5}$ longitudinis elytri æquantia.

♀. Ovipositor incurvus, pone medium haud dilatatus, squamoso-rugosus, apice subtus valde crenatus, dimidia parte apicali rufescente, margine supero plusquam dimidia longitudine valde trigonali serrato.

♂. Elytra minus lata. Femora intermedia pronoto haud duplo longiora. Cerci arcuati, teretes, apice truncati, haud incurvi. Lamina infra-genitalis angusta, sulcata, compressa, subtus infra stylos in lobulum minutum incisum producta; stylis sat brevibus.

Var. Articulus primus antennarum ♂ immaculatus. Elytra tantum maculis 3 eburneis vel nigro-viridibus, de reliquo haud nigro punctata.

♀. Long. corp. 22; pronot. 5·5; elytr. 39, lat. 15; femor. post. 22; ovipos. 5 millim.

♂. Long. corp. 20; pronot. 5·5; elytr. 36, lat. 13; femor. post. 20 millim.

FIGURES:—Fig. 20, the male insect.—Fig. 21, an elytron of the female.—Fig. 22, the ovipositor.—Fig. 23, the end of the male abdomen from above.—Fig. 24, ditto, from below.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—ECUADOR, Quito (*Brunner*).

The Panama specimens differ slightly from typical *H. trimaculata*, Brunn., in having the first joint of the antennæ not striolated with black, &c.

6. **Hyperphrona irregularis,** Brunn.

Hyperphrona irregularis, Brunn. v. W. Additam. zur Monogr. der Phaneropt. p. 168 (♂); Griffini, Bollet. dei Mus. di Zool. di Torino, xi. no. 232, p. 4 (♀) (1896).

Pallide viridis. Frons valde tumescens, carinis distinctis. Antennæ articulo primo nigro-marginato et medio nigro signato, articulo secundo nigro-striato, articulis sequentibus latere interno nigris. Pronotum antice angustatum, disco sulcis transversis impressis; canthis obtusis. Elytra in medio longitudine pronoti $2\frac{1}{2}$ latiora; vena ulnari maculis tribus plus minus orbicularibus albido-eburneis, fusco-cinctis, ornata, macula prima a cæteris magis remota.

♀. Caput minutum, luteum. Pronoti canthi laterales rotundati. Elytra vena principali rufescente; reticulatio campi ulnaris ad marginem suturalem leviter fusco-marginata. Ovipositor arcuatus, apice dilatatiusculo ac acuminato, subtiliter serrulato. Lamina infra-genitalis triangularis, carinata.

♂. Segmentum anale haud tumescens, truncatum. Cerci longi, parum incurvi, apice dilatati, obtusi. Lamina infra-genitalis emarginata.

♀. Long. corp. 26; pronot. 6; elytr. 39; femor. post. 22; ovipos. 7·5 millim.

♂. Long. corp. 25; pronot. 5·5; elytr. 40, lat. 14·3; femor. post. 22 millim.

Hab. PANAMA, Chiriqui (*Brunner*), Isthmus of Darien (*Griffini*).

PHYLLOPTERA, Serv.

Phylloptera, Serville, Rev. méth. Orthopt. p. 142 (1831); Hist. Nat. Ins. Orthopt. p. 402; Burmeister, Handb. d. Ent. ii. p. 61 (partim); Stål, Recens. Orthopt. 2, p. 16; Brunner v. W. Monogr. der Phaneropt. p. 307.

Synopsis specierum.

In speciebus sequentibus sunt tibiæ anticæ inermes.

a. Tibiæ anticæ supra teretes.—Elytra unicoloria viridia vel maculis singulis albidis interdum marmoratis ornata.

b. Frons utrinque in latere compressa.—Elytra opaca, unicoloria vel maculis minutis raris ornata.

c. Pronoti lobi laterales altiores quam latiores, margine antico sinuato.—Elytra femora postica duplo superantia.—1. *ovalifolia,* Burm.

cc. Pronoti lobi laterales subæque alti ac lati, margine antico subrecto. Frons valde compressa.

d. Elytra ante medium inter venam mediam et ulnarem macula albida, purpureo-circumdata. Femora postica quam pronotum triplo longiora.—2. *pisifolia,* Sss.

dd. Elytra immaculata. Femora postica pronoto haud triplo longiora.—3. *festæ,* Griff.

bb. Frons perpendicularis, rotundata, a latere vix compressa.—Femora antica subtus mutica.—4. *dimidiata,* Brunn.

aa. Tibiæ anticæ supra subsulcatæ.—Pronotum disco pone medium fusco-purpureo, nigro-limbato.

b. Elytra maculis 5 albis purpureo-circumdatis.—[*maculosa,* Burm. (Bahia).]

bb. Elytra maculis nullis.—5. *finoti,* Griff.

1. **Phylloptera ovalifolia,** Burm.

Phylloptera ovalifolia, Burm. Handb. d. Ent. ii. p. 693 (1838); Bolivar, Viaje al Pacifico, Orthopt. p. 56 (1884); Brunn. v. W. Monogr. der Phaneropt. p. 311. 4, t. 6. fig. 89.

Phylloptera punctum-album, Serv. Hist. Nat. Ins. Orthopt. p. 407; Stål, Recens. Orthopt. 2, p. 33.

Phylloptera viridicata, Serville, Hist. Nat. Ins. Orthopt. p. 407.

? *Phaneroptera oblongifolia,* Blanch. d'Orbigny, Voy. dans l'Amér. mérid., Ins. p. 216, t. 27. fig. 1 (1843).

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).—Ecuador; Brazil, Theresopolis, Santa Catherina.

A common species in Brazil, extending northwards to Southern Mexico. The specimens from this country are entirely green, sometimes with spots on the elytra. It is only in dried examples that the neuration is whitish or yellow.

2. **Phylloptera pisifolia,** Sauss. (Tab. XVI. figg. 25–27, ♂.)

Phylloptera pisifolia, Sauss. Rev. et Mag. Zool. xi. p. 202 (♂) (1859); Brunn. v. W. Monogr. der Phaneropt. p. 311. 5.

Figures.—Fig. 25, the male insect, in profile; 26, ditto, in part, from above, magnified; 26 *a,* ditto, natural size; 27, front view of the head of the male.

Hab. Mexico, Cordova (*Saussure*).

3. **Phylloptera festæ,** Griff.

Phylloptera festæ, Griffini, Bollet. dei Mus. di Zool. di Torino, xi. no. 232, p. 2 (1896).

♂. Viridi-flavescens; opaca. Caput compressum; frons utrinque carinata, apice retro-curvato. Verticis rostrum acuminatum. Pronotum canthis rotundatis; lobis lateralibus vix altioribus quam longioribus; margine antico superne sinuato; margine infero anterius subsinuato. Elytra in medio latiora; vena media in medio oriente, in tertia parte basali furcata; lineis vittæformibus a punctulis minutis fuscis confectis, obsoletissimis notatæ. Femora postica subtus 6 : 12-spinulosa. Tibiæ anticæ supra inermes,

foramine concolore, subtus utrinque spinulis 4. Segmentum anale truncatum. Lamina supra-analis apice rotundato-acuminata, basi trisulcata. Cerci apice parum inflexi, supra nigrati et denticulo sat acuto armati. Lamina infra-genitalis lata, brevis, carinulata, stylis brevissimis instructa.

Long. corp. 29; pronot. 7; elytr. 40, lat. 15; femor. post. 19·5 millim.

Hab. PANAMA, Punta de Sabana, on the Isthmus of Darien.

4. **Phylloptera dimidiata,** Brunn. (Tab. XVI. fig. 28, ♀.)

Phylloptera dimidiata, Brunn. v. W. Monogr. der Phaneropt. p. 314. 10.

♀. Pallide viridis. Verticis rostrum acuminatum, a fastigio frontis remotum. Frons parum tumescens, carinis lateralibus faciei distinctis. Pronoti discus antice acuminatus; canthis rotundatis; area postica nigro-viridi, velutina, fusco-limbata; lobis lateralibus multo altioribus quam latioribus. Lobi metasternales rotundati. Elytra nitida, elliptica, angustiora, margine antico parum, postico magis, arcuato; campo marginali quam dimidius campus discoidalis valde angustiore. Vena media in tertia parte basali furcata, ejus rami bini ad marginem suturalem desinentes; ramus posterior a vena ulnari sat remotus, ac cum illa per venulam transversam longiorem conjuncta. Discus maculis 3 : 5 minutis albidis, fusco-cinctis, in lineam longitudinalem invicem remotis, ornatus, insuper frequenter maculas majores fuscas vel bicolores ante medium præbens. Femora antica et intermedia subtus mutica; postica apice intus spinulosa. Ovipositoris valva superior inferiorem superans, acuminata, margine supero apice parum arcuato, crassiuscule crenulato.

♀. Long. corp. 22; pronot. 6; elytr. 36, lat. 12; femor. post. 19; ovipos. 5 millim.

♂. Long. corp. 21; pronot. 5·5; elytr. 31, lat. 10; femor. post. 15 millim.

Hab. PANAMA, Bugaba (*Champion*).—COLOMBIA.

5. **Phylloptera finoti,** Griff.

Phylloptera finoti, Griffini, Bollet. dei Mus. di Zool. di Torino, xi. no. 232, p. 3 (1896).

♂. Dilute viridis. Caput flavescens, frons sat tumescens, utrinque carinulata. Verticis rostrum acuminatum, sulcatum, cum fastigio frontis subcontiguum. Pronotum disco pone medium purpureo, nigro limbato, macula magna cordiformi aurantiaca ornato; prozona et lobi laterales hic illic parum distincte infuscati; canthi laterales fere rotundati. Lobi laterales altiores quam longiores. Elytra ovato-lanceolata; vena media in tertia parte basali furcata. Margines elytrorum unicolores; margo suturalis arcuatus, margo costalis subrectus; apex rotundatus. Femora postica spinis extus 6, intus 4. Tibiæ anticæ supra perobsolete sulcatæ, inermes, subtus utrinque 3 : 4-spinulosæ, basi spinularum nigricante. Tibiæ intermediæ supra sulcatæ, in margine postico supra spina 1. Segmentum anale truncatum. Cerci conici, parum inflexi, supra denticulis nigris 3 : 4 instructi. Lamina infra-genitalis carinulata, stylis brevissimis instructa.

Long. corp. 21; pronot. 5 3; elytr. 34, lat. 10·5; femor. post. 18 millim.

Hab. PANAMA, Punta de Sabana, on the Isthmus of Darien.

Group **TURPILIITES.**

Turpiliæ, Brunner v. W. Monogr. der Phaneropt. p. 321.

TURPILIA, Stål.

Turpilia, Stål, Recens. Orthopt. 2, p. 16 (1874); Brunner v. W. Monogr. der Phaneropt. p. 324.

The species of this genus inhabit Central and South America and the Antilles.

Synopsis specierum.

a. Oculi oblongi, elliptici.

b. Cerci ♂ breves, teretes, apice breviter incurvo:

c. crassiusculi, subtus recti, apice recurvo gracili, acuto.—1. *oblongoculata*, Brunn.

cc. paulo minus crassi, subtus ad apicem minute sinuati, apice brevissime incurvo, hebetato. —2. *ocularis*, sp. n.

bb. Cerci ♂ longi, dimidia parte apicali compressa fere rectangulariter incurva.—3. *oridiops*, sp. n.

aa. Oculi globosi.

b. Metasterni lobi rotundati.

c. Tibiæ anticæ superne sulcatæ.—4. *mexicana*, Brunn.

cc. Tibiæ anticæ superne teretes.

d. Pronotum rugulosum, canthis acutiusculis. Tibiæ posticæ haud dilatatæ. Cerci lamina subgenitali valde longiores.—5. *rugulosa*, Brunn.

dd. Pronotum lævigatum, canthis antice rotundatis. Mesosternum rotundato-lobatum. —6. *tenella*, Brunn.

bb. Metasterni lobi producti, triangulares. Pronotum læve, punctatum, rugulatum. Elytra margine suturali recto.—7. *opaca*, Brunn.

1. **Turpilia oblongoculata**, Brunn. (Tab. XVI. fig. 29, ♂.)

Turpilia oblongoculata, Brunn. v. W. Monogr. der Phaneropt. p. 326. 1.

Minor. Oculi oblongi. Pronotum lævigatum; lobis lateralibus æque longis ac altis; canthis luteis. Femora subtus spinulosa. Lobi metasterni rotundati, mesosternum obtusangulatim incisum.

♀. Ovipositor basi latiusculus, pronoto parum longior, marginibus ferrugineis.

♂. Segmentum anale medio depressum, margine recto. Cerci crassiusculi, teretes, apicem versus attenuati, recti vel subarcuati, apice gracili, fusco, rectangulatim incurvo, acuto, spiniformi. Lamina infragenitalis breviuscula, angulatim incisa, stylis brevissimis instructa.

♀. Long. corp. 16; pronot. 4·2; elytr. 27; femor. post. 17; ovipos. 5 millim.

♂. Long. corp. 15; pronot. 4; elytr. 22; femor. post. 16 millim.

Hab. Mexico, Cordova (*Höge*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Oaxaca (*Brunner*); Guatemala (*Mus. Genavense*); Costa Rica (*Biolley*).

Closely allied to *T. ocularis*, but with the cerci somewhat differently formed, *i. e.* not notched beneath before the end, and with their recurved apex longer and acute.

2. **Turpilia ocularis**, sp. n.

♂. Viridis. Caput angustum; oculi elongati elliptici, quam lati valde longiores. Verticis rostrum elongatum, angustum, sulcatum. Frons utrinque in longitudinem depressa, utrinque vix carinata; fastigio lanceolato, dentiformi, cum vertice angustissime contiguo; ocello minuto. Pronotum longiusculum, nitidum, supra planum; canthis tota longitudine subacutis. Lobi laterales æque alti ac longi, rugulosi, postice et inferne regulariter rotundati, angulo antico obtusangulo; incisura humerali vix acutangula. Elytra parum longa, densissime reticulata, punctis minimis nigris remote conspersa; campo marginali venis transversis irregulariter notato. Vena media in medio venæ discoidalis oriens, ultra medium furcata, parum curvata; vena ulnaris recta, ramos transversos ad marginem suturalem emittens. Campus tympanalis dexter in medio totus hyalinus. Femora anteriora et intermedia margine antico apice spinuloso. Tibiæ

posticæ femoribus æquilongæ. Segmentum anale in medio impressum, concavum, ad inferum deflexum sulcatum, tuberculis reniformibus 2 obsoletis contiguis notatum, apice brevissime trapezino-productum, late truncatum, parte apicali transverse strigata. Lamina supra-analis minima, segmentum anale vix superans, anguste trigonalis. Cerci teretes, parum longi, subrecti, subtus ante apicem minute sinuati, apice imo brevissime rectangulariter incurvo, unguiculo armato (vel potius apice supra dentem minutam hebetatam efficiente). Lamina infra-genitalis tricarinata, truncata, stylis brevissimis instructa.

♂. Long. corp. 15; pronot. 4·5; elytr. 24, latit. 4·5; femor. post. 18 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

3. **Turpilia oridiops,** sp. n.

♂. Tota viridis, opaca. Verticis rostrum elongatum, compressum, supra et ad apicem sulcatum, bicarinulatum, haud constrictum, antice tamen leviter incrassatum, nitidum. Frons pallidior; ejus latera sub oculos perpendiculariter canaliculata, itaque utrinque obsolete carinata; ejus fastigium angustum, lanceolatum, apice subacuminatum, minute truncatum, quam verticis apex angustius. Pronotum disco plano, antice valde attenuato, canthis postice acute rotundatis, antice subevanidis; sulco typico transverso, impresso. Lobi laterales quam altiores paulo longiores, postice late rotundati, incisura humerali profunda, acuta. Elytra opaca, brevia, femora postica parum superantia, tota densissime reticulata; margine suturali recto; campo marginali venis nullis. Vena media subrecta, ultra medium venæ discoidalis oriens, prope basin furcata. Vena ulnaris ramos 6:7 transversos obsoletissimos emittens. Campus tympanalis dense reticulatus, immaculatus, ille elytri dextri area membranacea nulla. Pedes breviusculi. Femora anteriora et intermedia subtus margine antico acute spinulosa; anteriora spinis 3:4 lamellaribus, intermedia spinis 5 minoribus armata. Femora postica modice longa, crassiuscula, parte filiformi vix dimidiam longitudinem formante; subtus utrinque dimidia parte apicali spinulosa, spinis apice nigris; tibiæ posticæ femoribus paulo longiores. Segmentum anale in medio margine longiuscule trapezino-productum, truncatum, inter cercos deflexum. Lamina supra-analis sub illo abscondita, deflexa, ultra illum prominula, anguste trigonalis, apice hebetato. Cerci apice hebetato, basi valde incurvi, dimidia parte basali crassiuscula, terete; dimidia parte apicali, vel plus, graciliore, vix arcuata, valde compressa, apice unguiculis 2 nigris armata. Lamina infra-genitalis brevis, tricarinata, margine postico transverso, stylis brevissimis instructa.

Long. corp. 16; pronot. 4; elytr. 21·5; femor. post. 14·8 millim.

Hab. Mexico, Acapulco in Guerrero (*H. H. Smith*).

This species is well characterized by the peculiar shape of the male cerci. The anal segment is produced between the cerci almost in the form of a truncate triangle, less widely truncate than in *T. ocularis*. In the tympanal field of the left elytron the two postaxillary veins are angulated inwards, and do not converge posteriorly, forming an open triangle.

4. **Turpilia mexicana,** Brunn.

Turpilia mexicana, Brunn. v. W. Monogr. der Phaneropt. p. 327. 3.

Hab. Mexico, Oaxaca.

5. **Turpilia rugulosa,** Brunn.

Turpilia rugulosa, Brunn. v. W. Monogr. der Phaneropt. p. 328. 6.

Hab. Mexico, Buenavista.—Cuba.

6. **Turpilia tenella,** Brunn.

Turpilia tenella, Brunn. v. W. Monogr. der Phaneropt. p. 329. 7.

Hab. Mexico, Buenavista.

7. **Turpilia opaca,** Brunn.

Turpilia opaca, Brunn. v. W. Monogr. der Phaneropt. p. 329. 9.

Hab. Mexico, Buenavista.

APOCERYCTA, Brunn.

Apocerycta, Brunner v. W. Monogr. der Phaneropt. p. 331.

1. **Apocerycta incommoda,** Brunn.

Apocerycta incommoda, Brunn. v. W. Monogr. der Phaneropt. p. 332. 1, t. 7. fig. 96 (♂ ♀).

Hab. Mexico.

Unknown to us.

Group **MICROCENTRITES.**

Microcentra, Brunner v. W. Monogr. der Phaneropt. p. 332.

MICROCENTRUM, Scudd.

Phylloptera, Burmeister, Handb. d. Ent. ii. p. 692 (1838) (part.) (nec Serville).
Orophus, Saussure, Rev. et Mag. Zool. (2) xi. p. 204 (1859) (part.).
Microcentrum, Scudder, Bost. Journ. Nat. Hist. vii. p. 446 (1862); Stål, Recens. Orthopt. ii. p. 18; Brunner v. W. Monogr. der Phaneropt. p. 333.

The form of the stridulating field of the male elytra is somewhat characteristic of this genus. In the left elytron it has two transverse veins. In the right elytron it is strongly reticulated, divided by a stout longitudinal vein, and has small hyaline cells. In the females the dorsal field of the right elytron is partly membranaceous within, divided by a strong vein (2nd axillary), which is pectinated with transverse venulæ, tomewhat as in *Stilpnochlora.*

Synopsis specierum *.

I.

1. Vena media in marginem suturalem elytri excurrens.
   2. Apex verticis articulo primo antennarum duplo haud vel vix latior.
      3. Elytra coriacea, polita, nitida.
         4. Pronoti canthi laterales rotundati. (Elytra in margine antico ipso punctis callosis signata.)

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* Secundum Brunner v. Wattenwyl.

5. Fastigium frontis articulo primo antennarum æque latum, ocello parvo instructum. Statura minor.—[*angustatum*, Brunn. (Brazil).]

5, 5. Fastigium frontis articulo primo antennarum latius, ocello magno instructum. Statura major.—1. *lanceolatum*, Burm.

4, 4. Pronoti canthi laterales acuti vel subacuti.

5. Elytra in margine ipso punctis callosis elevatis instructa.

6. Minor. Femora antica subtus spinulis 2. Styli ♂ longiores.—[*marginatum*, Brunn. (Brazil).]

6, 6. Major. Femora antica subtus inermia. Styli ♂ breviores.—[2. *myrtifolium*, sp. n.]

5, 5. Elytra in margine antico punctis callosis nullis.

6. Apex verticis acuminatus, articulo primo antennarum angustior. Sterna non lobata.—[*lucidum*, Brunn. (Brazil).]

6, 6. Apex verticis obtusus, articulo primo antennarum latior. Sterna lobata.

7. Apex verticis articulo primo antennarum vix latior. Frons brevis.

8. Pronotum margine postico rotundato.

9. Apex verticis sulcatus. Vena media elytri cum vena ulnari per ramulum transversum longiorem conjunctus. Cerci ♂ apice securiformes.—3. *securiferum*, Brunn.

9, 9. Apex verticis non sulcatus. Vena media cum angulo venæ ulnaris subcontigua, vel cum illo confluens.—[*pallidum*, Brunn. (Antilles and S. Amer.).]

10. Vena media cum angulo venæ ulnaris per venulam transversam brevissimam conjuncta. Cerci ♂ apice clavati. Tibiæ 1, 2 unispinosæ.

10, 10. Vena media cum angulo venæ ulnaris confluens. Tibiæ 1, 2 subtus muticæ. Cerci ♂ apice haud incrassati.—[4. *martinicum*, sp. n.]

8, 8. Pronotum margine postico triangulariter producto. Apex verticis sulcatus. Vena media parum flexuosa, a vena ulnari sat remota. Cerci ♂ apice clavati.—[*triangulatum*, Brunn. (Antilles).]

7, 7. Apex verticis articulo primo antennarum duplo latior.

8. Frons et pronotum lævia. Vena media elytri ante medium oriens, a vena principali remota, illi parallela; ejus ramus secundus cum vena ulnari angulatim conjunctus.—5. *championi*, sp. n.

8, 8. Frons et pronotum crasse punctata. Vena media elytri ultra medium oriens, venæ principali haud parallela; ejus ramus secundus cum vena ulnari per venulam longiusculam conjunctus.—6. *punctifrons*, Brunn.

3, 3. Elytra parum coriacea, haud polita.

4. Pronotum margine antico medio denticulato. (Statura majore.)—7. *laurifolium*, L.

4, 4. Pronotum margine antico integro, subsinuato.—8. *retinerve*, Burm.

2, 2. Apex verticis articulo primo antennarum triplo latior. (Elytra ovata, lata.)

3. Vena media a vena principali remota. Statura minor.

4. Pronoti margo anticus medius in dentem productus; ejus canthi recti. Elytra viridia.—[9. *concisum*, Brunn. (Colombia).]

4, 4. Pronoti margo anticus integer:

5. ejus canthi sinuati. Elytra macula transversa lata, fusco-ferruginea.—[10. *ligatum*, Brunn. (Colombia).]

5, 5. Ejus canthi recti. Elytra tota viridia. Pronotum crasse punctatum.—11. *cribrosum*, sp. n.

3, 3. Vena media elytri usque ad furcationem cum vena principali subcontigua. Statura major.

4. Caput et pronotum lævia, nitida. Elytra partim hyalina.

5. Vena media ante medium venæ principalis oriens, cum hac vena subcontigua et angulo subrecto furcata. Vena ulnaris basi subrecta, a vena principali sat remota.—12. *colosseum*, Brunn.

5, 5. Vena media longe ultra medium venæ principalis oriens, angulo subrecto deflexo, non furcata. Vena ulnaris basi venam principalem versus inflexa, et circa medium hujus venæ angulo subrecto deflexa.—[*erosum*, Brunn. (Upper Amazons).]

4, 4. Caput et pronotum impresso-punctata. Elytra haud nitida, reticulosa.—[*elephas*, Brunn. (Paraguay).]

1, 1. Vena media in apicem elytri exiens.

b. Elytra coriacea, nitida; pronoti canthi rotundati nulli.—13. *otomium*, Sss.

bb. Elytra semicoriacea; pronoti canthi acutissimi.—14. *aztecum*, sp. n.

II.*

a. Elytra margine costali in dimidia parte basali callis subtuberculiformibus depressis, luteis vel concoloribus instructo.—[*angustatum*.]—*lanceolatum*.—[*marginatum*.]

aa. Elytra margine costali absque callis, normali.—*securiferum*.—[*triangulatum*.]—*championi*.—*punctifrons*.—*laurifolium*.—*retinerve*.—*cribrosum*.—*colosseum*.—[*elephas*.]—*otomium*.—*aztecum*.

III.

a. Elytra valde coriacea, polita.—[*angustatum*.]—*lanceolatum*.—*securiferum*.—[*triangulatum*.]—*laurifolium*.—*retinerve*.—*cribrosum*.—*colosseum*.—*aztecum*.

aa. Elytra semicoriacea, venulosa, haud polita.—*championi*.—[*ligatum* ?]—[*elephas*.]—*punctifrons*.—*otomium*.

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* *M. elephas*, *M. ligatum*, et *M. securiferum* nobis ignota.

1. **Microcentrum lanceolatum,** Burm. (Tab. XVII. figg. 1, 2, ♀.)

Phylloptera lanceolata, Burm. Handb. d. Ent. ii. p. 692 (1838).
Microcentrum lanceolatum, Brunn. v. W. Monogr. der Phaneropt. p. 335. 2, t. 7. fig. 97.
Phylloptera laurifolia, de Haan, Bijdr. tot de Kenn. Orthopt. p. 197.
Phylloptera (*Orophus*) *salvifolia,* Sauss. Rev. et Mag. Zool. (2) xi. p. 204 (1859).

Figures :—Fig. 1, the female insect.—Fig. 2, the head from in front, magnified.

Hab. Guatemala, San Gerónimo (*Champion*).—South America, Cayenne, Surinam, Pernambuco, Bahia, Rio Janeiro.

[2. **Microcentrum myrtifolium,** sp. n.

♀. Prasinum. Apex verticis quam primus articulus antennarum paulo latior, subsulcatus. Frontis fastigium paulo latius, apice subincisum, ocello magno notatum. Pronotum leviter corrugatum, antice leviter coarctatum; metazona punctata; canthis tota longitudine distinctis et rotundatis. Elytra nitida, lanceolata, apice angustato, parabolico, quam in *M. lanceolato* minus acuto; campo marginali lato, margine antico arcuato, tertia parte proximali nodulis carneis sat minutis signato; margine postico, basi et apice exceptis, subrecto; vena media ante medium venæ principalis oriens, ejus ramus primus cum vena ulnari per venulam transversam conjunctus. Femora antica subtus mutica, postica dimidia parte distali spinulosa. Lobi sternales producti, acuti.

♂. Verticis apex deflexus, anguste sulcatus, frons ocello maximo. Pronotum nitidum, minus corrugatum, supra angusto, canthis postice acutis, nitidis, in prozona magna parte rotundatis at nihilominus distinctis. Elytrorum noduli marginis antici basi crassi, dehinc minuti, longe ante medium marginem desinentes. Campus tympanalis sinistri elytri totus coriaceus, venis stridulantibus 2 parallelis, nitidis. Segmentum anale supra transversum, margine postico recto. Lamina infra-genitalis angusta, elongata, valde carinata, apice acutangulatim incisa, stylis subarcuatis, teretibus, instructa.

♀. Long. corp. 27·5; pronot. 7·4; elytr. 51, lat. 15·5; femor. post. 26·5; ovipos. 5·5 millim.
♂. Long. corp. 27; pronot. 7·4; elytr. 48·5, lat. 14; femor. post. 26·5; styl. 1·4 millim.

Hab. Brazil (*Mus. Genavense*).

A very peculiar species. The female resembles *M. lanceolatum* and its allies, but has a narrower vertex and forehead, and the ridges of the pronotum are more distinct, not obliterated anteriorly, nearly as in *M. triangulatum* (which has a much broader pronotum, narrow vertex, small ocelli, &c.). The male is somewhat different, it having the apex of the vertex deflexed downwards and bearing a fine sulcus; nevertheless, we cannot separate it from the female.]

3. **Microcentrum securiferum,** Brunn.

Microcentrum securiferum, Brunn. v. W. Monogr. der Phaneropt. p. 337. 5.

Hab. Panama, Chiriqui.

Unknown to us.

[4. **Microcentrum martinicum,** sp. n.

Prasinum, nitidum, statura media. Verticis apex planus, haud sulcatus, apice primo articulo antennarum fere æquilatus; frontis fastigium ocellum minutum gerens. Pronotum planum, nitidum, postice subtiliter striolatum; canthis acutis, luteis; margine postico rotundato; lobi laterales inferne attenuati. Elytra ovato-lanceolata, marginibus binis arcuatis; vena media ante medium oriens, ejus ramus primus

cum angulo apicali venæ ulnaris in angulum confluens. Femora antica et intermedia subtus inermia; postica dimidia parte distali spinulosa.

♀. Ovipositor haud parvus, valde incurvus, apice potius attenuatus, margine infero regulariter arcuato. Lamina infra-genitalis elongato-trigonalis, apice rotundato, basi sulcata.

♂. Minor. Verticis apex paulo angustior. In elytris, venæ mediæ ramus primus cum vena ulnari nonnunquam haud confluens, sed per venulam brevissimam conjunctus. Cerci parum arcuati ac longi, apice breviter incurvo, acuminato; unguiculo nigro arcuato. Lamina infra-genitalis compressa, acute incisa, stylis longiusculis subcompressis instructa.

♀. Long. corp. 27·5; pronot. 7·5; elytr. 47; femor. post. 26·6; ovipos. 5 millim.
♂. Long. corp. 22; pronot. 5·7; elytr. 36·5; femor. post. 21·5 millim.

Hab. ANTILLES, Martinique.

This species is allied to *M. pallidum*, Brunn., from which it may be separated by the unarmed anterior femora and the somewhat differently shaped elytra, the posterior margin of the latter being arcuate and the median vein anastomosed at its angle with the ulnar vein.]

5. **Microcentrum championi,** sp. n. (Tab. XVI. fig. 30, ♂.)

Læte viride. Apex verticis articulo primo antennarum duplo latior, subhorizontalis, planiusculus, sulcatus. Frons subtiliter sparse punctata; ejus fastigium primo articulo antennarum duplo latius, superne rotundato-bilobatum. Oculi globosi. Pronotum supra velutinum, planum, retro parum dilatatum; margine antico in medio subdentato, postico valde arcuato, sulco postico vix nullo. Lobi laterales latiusculi, punctati, rectangulatim inserti, canthis hebetatis. Lobi sternales producti, acuti. Elytra coriacea, nitida, lata. Vena media elongata, longe ante medium oriens, apice angulatim curvata, a vena principali modice remota et illi parallela; ejus ramus secundus cum vena ulnari angulatim confluens; vena ulnaris flexuosa. Femora antica subtus inermia; intermedia margine antico 2–3-spinulosa; postica in utroque margine spinosa.— ♂. Cerci longi, teretes, apice leviter incurvi, margine apicali brevissime compresso, nigro. Lamina infra-genitalis apice incisa. (In desiccatis pronotum vitta transversa lutea, elytrorumque margo costalis a medio luteus.)

Long. corp. 32; pronot. 9; elytr. 44, lat. 15; femor. post. 25 millim.

Hab. PANAMA, Bugaba (*Champion*).

This species has some of the characters of *M. retinerve*, but the vertex is broader, not inclined. In *M. retinerve* the pronotum is marked by two strong sulci cutting the edges; the elytra are much more reticulated, more membranaceous, not hard and polished; and the spines of the hind femora are not so strong as in *M. championi*. The present insect is also very closely allied to *M. punctifrons*, but it is larger; the forehead and pronotum are not strongly punctured; the venulation of the elytra is different, the median vein having the second branch anastomosed at its angle with the ulnar vein; and the pronotum has rather more acute edges, its anterior margin having a sort of tooth. From *M. concisum* it may be distinguished by the narrower vertex.

6. **Microcentrum punctifrons,** Brunn.

Microcentrum punctifrons, Brunn v. W. Additam. zur Monogr. der Phaneropt. p. 181. 15.

Species distincta. Frons valde punctata. Pronoti canthi subacuti, leviter rotundati, sicut discus punctati; lobi laterales etiam crasse punctati.

♂. Pronoti canthi paulo magis rotundati, verticis apex primo articulo antennarum duplo latior. Cerci apice curvato, acuto. Lamina infra-genitalis stylis teretibus longiusculis instructa.
♀. Long. corp. 24; pronot. 6; elytr. 35, lat. 13; femor. post. 17; ovipos. 6 millim.
♂. Long. corp. 21; pronot. 6; elytr. 31, lat. 11; femor. ? millim.

Hab. PANAMA, Chiriqui (*Champion*: ♂).—GUIANA, Cayenne (*Prudhomme*: ♀).

7. **Microcentrum laurifolium,** Linn. (Tab. XVII. figg. 3–5, ♀.)

Gryllus laurifolius, Linn. Syst. Nat. ed. 10, p. 429 (1758); Mus. Lud. Ulr. p. 126.
Locusta laurifolia, Fabr. Ent. Syst. ii. p. 34.
Phylloptera (*Orophus*) *rhombifolia,* Sauss. Rev. et Mag. Zool. (2) xi. p. 204 (1859).
Microcentrum laurifolium, Stål, Recens. Orthopt. 2, p. 42; Brunn. v. W. Monogr. der Phaneropt. p. 339. 8.
Microcentrum affiliatum, Scudd. Bost. Journ. Nat. Hist. vii. p. 447, fig. 5 (1862).

Var. *a.* Minor. Pronoti margo anterior sinuatus, in medio haud productus. Laminæ infra-genitalis styli gracillimi, breves.—*b.* Pronoti margo anterior sinuatus, in medio haud productus.—*c.* ♀. Lamina infra-genitalis leviter incisa. (Mazatlan.)—*d.* ♂. Lamina infra-genitalis vix incisa, stylis brevissimis instructa.—*e.* ♂. Styli paulo longiores, cylindrici. (Puente de Ixtla.)

FIGURES:—Fig. 3, pronotum, elytron, and wing of the female:—Fig. 4, head and pronotum from above, magnified.—Fig. 4 *a*, ditto, natural size.—Fig. 5, the head from in front, magnified.

Hab. NORTH AMERICA, Georgia, Texas.—MEXICO (*Mus. Genavense*), Durango and Presidio de Mazatlan (*Forrer*), Tierra Colorada in Guerrero, Puente de Ixtla in Morelos, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Gerónimo (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

In this species the tympanal field of the left elytron of the male has three transverse veins, and the postaxillary triangle is membranaceous and reticulated on its inner side.

Specimens of the variety *b*, of median size, may be easily confounded with *M. retinerve*, as they have the middle of the anterior margin of the pronotum not or scarcely produced. Nevertheless, it is not difficult to distinguish them from that species, the females having the inferior valve of the ovipositor truncate at the tip and the males having very slender and short styli, while in *M. retinerve* they are long and thicker; moreover, in both sexes, the pronotum is flat, with the lateral ridges very slightly interrupted by the anterior sulcus, while in *M. retinerve* the superior face of the pronotum is transversely canaliculated by two wide shallow sulci, and the lateral ridges are rather strongly cut by the anterior sulcus.

8. **Microcentrum retinerve,** Burm. (Tab. XVII. figg. 6–8.)

Phylloptera retinervis, Burm. Handb. d. Ent. ii. p. 692 (1838).
Microcentrum retinervis, Scudd. Bost. Journ. Nat. Hist. vii. p. 446 (1862); Brunn. v. W. Monogr. der Phaneropt. p. 339. 9.
Phylloptera salicifolia, Sauss. Rev. et Mag. Zool. (2) xi. p. 204 (1859).
Phylloptera totonaca, Sauss. loc. cit.

♂. Lamina infra-genitalis plus minus incisa; stylis longiusculis, teretibus instructa.
♀. Long. corp. 26–23; pronot. 5–6; elytr. 36–41, lat. 12–13; femor. post. 18–20; ovipos. 5–6 millim.
♂. Long. corp. 18–25; pronot. 5–6; elytr. 31–40, lat. 10–12; femor. post. 16–20 millim.

FIGURES:—Fig. 6, pronotum, elytron, and wing of the female, in profile.—Fig. 7, anterior part of the male insect, from above.—Fig. 8, the head from in front, magnified.

Hab. NORTH AMERICA, Georgia, Carolina, Texas.—MEXICO, Orizaba, Mirador, Cordova (*Saussure*), Atoyac in Vera Cruz (*Schumann*, *H. H. Smith*), Misantla (*F. D. G.*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA (*Mus. Genavense*), Dueñas, Capetillo (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA, Volcan de Irazu (*Rogers*), La Palma (*Biolley*); PANAMA, Volcan de Chiriqui (*Champion*).

[9. **Microcentrum concisum,** Brunn.

Microcentrum concisum, Brunn. v. W. Monogr. der Phaneropt. p. 340. 10.

Hab. COLOMBIA.

This and the following species are unknown to us.]

[10. **Microcentrum ligatum,** Brunn.

Microcentrum ligatum, Brunn. v. W. Additam. zur Monogr. der Phaneropt. p. 180. 15.

Hab. COLOMBIA.]

11. **Microcentrum cribrosum,** sp. n.

♂. Caput majusculum, prominulum. Vertex apice planatus, quam primus articulus antennarum triplo latior, sulcatus, margine apicali transverse recto et carinulato, cum fronte angulum rectum vel subacutum formans, illumque leviter superans; ejus margo anterior in plano frontis jacens. Frons punctata, processu supero lato, margine supero subsinuato, angulis rotundatis. Pronotum supra latum, parallelum, ubique grosse punctatum; canthis lateralibus leviter rotundatis, per sulcum anteriorem valde incisis; sulco posteriore obsoleto, depressionem formante; margine antico subsinuato, dente nullo, margine postico parum fortiter arcuato. Lobi laterales rectangulatim inserti, punctati, æque lati ac alti. Elytra latissima, parum longa, modice coriacea, reticulosa, margine postico valde arcuato; vena principali valde flexuosa. Vena media a vena principali remota, illi parallela, cum illa venulis transversis parallelis conjuncta; ejus ramus secundus cum vena ulnari per venulam longiusculam conjunctus. Femora antica mutica; intermedia in margine postico dente unico armata; postica in utroque margine a medio spinulosa. Tibiæ posticæ a latere basin versus latiores. Cerci longiusculi, apice denticulo minimo nigro. Lamina infra-genitalis truncata, stylis longiusculis.
♂. Long. corp. 22; pronot. 6; elytr. 35, lat. 14; femor. post. 20 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

A very distinct species by reason of its wide, carinated vertex, coarsely punctured pronotum (the punctuation being coarser than in *M. punctifrons*), and wide elytra.

12. **Microcentrum colosseum,** Brunn. (Tab. XVII. figg. 9, 10, ♂.)

Microcentrum colosseum, Brunn. v. W. Monogr. der Phaneropt. p. 341. 11 (♀).

Prasinum. Vertex valde declivis, apice quam primus articulus antennarum triplo vel quadruplo latior. Pronotum supra parallelum, antice fornicatum; canthis nullis, complete rotundatis; impressionibus mediis distinctis, ad sulcum posticum bifoveolatis; parte postica plana, punctata, margine postico valde arcuato.

Elytra latissima, submembranacea. Vena principalis valde flexuosa; vena media illi parallela ac valde propinqua; ejus rami fere rectangulatim deflexi; ramus primus per venulam brevissimam cum vena ulnari conjunctus. Femora anteriora et intermedia subtus margine antico spinuloso; posteriora extus tota longitudine, intus a medio remote, spinosa.

♀. Ovipositor longiusculus, apice valde dilatatus et truncatus. (*Brunner.*)

♂. Elytrorum vena media ramos tres, vena discoidalis ramos 2, vena ulnaris ramos 3, transversos formantes; venæ mediæ ramus secundus bis angulatim fractus, ejusque angulis per venulam brevem cum vena ulnari et cum ramo tertio venæ mediæ conjunctis. Campus discoidalis fasciis 6 in venis transversis positis et apice imo, hyalinis; hæ fasciæ punctis fuscis numerosis conspersæ. Cerci teretes; apice breviter incurvo, acuto. Lamina infra-genitalis apice carinata et ad carinam utrinque exarata, apice subsinuata; stylis gracilibus, brevibus, remotis instructa.

♀. Long. corp. 25; pronot. ?; elytr. 49, lat. 20; femor. post. 23; ovipos. 7 millim.

♂. Long. corp. 28; pronot. 8; elytr. 45, lat. 17; femor. post. 21 millim.

FIGURES:—Fig. 9, the male insect.—Fig. 10, ditto, from above, showing the structure of the elytron.

Hab. PANAMA, Bugaba (*Champion*: ♂).—COLOMBIA, Santa Marta (*Brunner*: ♀).

The female only was known to Brunner v. Wattenwyl. The male here described also presents peculiar characters in the elytra (hyaline bands and numerous brown spots), and it seems to agree perfectly with the female in this respect. *M. colosseum* is nearly allied to *M. erosum*, Brunn., from the Upper Amazons, but may be distinguished from it by the spinose hind femora.

13. **Microcentrum otomium,** Sauss. (Tab. XVII. figg. 11, 12, ♂.)

Phylloptera (*Orophus*) *otomia,* Sauss. Rev. et Mag. Zool. (2) xi. p. 204 (1859).

Microcentrum otomium, Brunn. v. W. Monogr. der Phaneropt. p. 342. 13.

Statura majuscula. Viride. Verticis apex articulo primo antennarum duplo latior, perpendicularis, cum fastigio frontis in lineam arcuatam sinuatam conjunctus. Oculi globosi. Pronotum velutinum, retro dilatatum, margine antico medio subproducto, margine postico arcuato; disco haud rugoso, sulco postico transverso, recto, subplicato, profundo, utrinque abbreviato; sulco intermedio nullo; area postica velutina, haud rugata. Lobi laterales valde altiores quam latiores. Lobi sternales producti, acuti. Elytra coriacea, lanceolata, margine suturali arcuato, vena media longe ante medium venæ principalis oriens, flexuosa, prope basin furcata; ejus ramus anterior indivisus; ramus posterior fractus vel per ipsum ejus angulum cum vena ulnari per venulam conjunctus. Vena ulnaris recta, apice obtusangulatim fracta, dehinc obliqua, postice ramos 2 obliquos ad marginem suturalem emittens. Femora antica subtus inermia; intermedia margine antico apice spinulis 2–3; postica subtus utrinque fere tota longitudine crassiuscule spinulosa. Tibiæ posticæ a latere basin versus dilatatiusculæ. Cerci ♂ teretes, apice nigro-mucronati. (Color capitis, pronoti, thoracisque in desiccatis, flavescens, elytrorumque margine costali basi eburneo.)

♂. Long. corp. 29; pronot. 7; elytr. 51, lat. 16; femor. post. 24 millim.

FIGURES:—Fig. 11, the head of the male, from in front, magnified.—Fig. 12, pronotum, elytron, and wing, in profile.

Hab. MEXICO, Cordova (*Saussure*).

14. **Microcentrum aztecum,** sp. n. (Tab. XVII. fig. 13, ♂.)

♂. Statura minore, pallide viride. Verticis apex articulo primo antennarum fere duplo latior, valde declivis, cum fastigio frontis linea subarcuata conjunctus. Oculi oblongi, elliptici. Pronotum nitidum, retro dilatatum, margine antico sinuato, postico medio arcuato; disci sulco intermedio angulato, postico parum expresso; area postica rugulosa, punctata; canthis lateralibus totis acutissimis. Lobi laterales æque longi ac alti, postice rotundati, margine infero leviter sinuato, angulo antico recto, hebetato. Lobi meso-

sternales haud producti, haud acuti. Lobi metasternales rotundati vel obtusanguli. Elytra semimembranacea, lanceolata, margine postico arcuato. Vena media longe ante medium venæ principalis oriens, fere recta, ad mediam longitudinem vel ultra medium furcata; ejus ramus anterior irregularis, apice furcatus, ramulis ad marginem apicalem elytri desinentibus; ejus ramus posterior rectus, indivisus, liber, a vena ulnari remotus. Vena ulnaris elongata, venæ mediæ parallela, libera, apice curvata, ad quartam partem apicalem marginis suturalis desinens, ramos 3 ad marginem suturalem emittens, basi valde curvata. Femora antica et intermedia in margine antico spinulis 3–4 armata; postica in utroque margine remote spinulosa, spinulis minimis. Tibiæ posticæ graciles, lineares, a latere basi haud dilatatæ. Cerci ♂ crassi, breves, apice arcuato-mucronati. Lamina infra-genitalis stylis brevibus instructa.

♂. Long. corp. 18; pronot. 4·5; elytr. 33, lat. 6; femor. post. 21 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

[LOBOPHYLLUS, Sauss.

Lobophyllus, Saussure, Rev. et Mag. Zool. (2) xi. p. 205 (1859); Brunner v. W. Monogr. der Phaneropt. p. 343.

1. **Lobophyllus legumen**, Sauss. (Tab. XVIII. figg. 12–15, ♀.)

Lobophyllus legumen, Sauss. Rev. et Mag. Zool. (2) xi. p. 205; Brunn. v. W. Monogr. der Phaneropt. p. 343. 1, t. 7. fig. 98.

Crassus, totus viridis. Caput crassissimum. Oculi suborbiculares modice prominuli. Vertex inter antennas latissimus, obtusissimus, quam primus articulus antennarum 5–6 latior, cum fronte per sulcum subtilem subrectum conjunctus; ocelli haud perspicui. Antennæ gracillimæ. Pronotum supra planum, tenuiter rugulosum, postice quam antice paulo angustius; canthis rotundato-acutis; margine antico transverso, in medio obtuse dentato, postico subangulato-rotundato, parum producto. Lobi laterales altiores quam latiores; margine postico parum arcuato, infero obliquo, subrecto, anterius ascendente, angulo antico obtuso. Lobi mesosterni piriformes, in dentem obtusum producti; lobi metasternales triangulariter lobati. Elytra ovata, coriacea, latissima, subtiliter densissime punctata, margine postico et antico fere æqualiter arcuato. Vena discoidalis valde flexuosa; vena media ultra medium oriens, tenuis, a vena discoidali parum remota et illi parallela, apice rotundatim deflexa; ante medium ramos 2 subrectos emittens, primo cum furcatione venæ ulnaris confluente. Vena ulnaris a margine suturali valde remota. Alæ elytra vix superantes, latæ, apice rotundatæ; campo anteriore lato; ejus apice anguste coriaceo-marginato; vena ulnari 5-ramosa. Pedes antici breves; femoribus in margine antico spinulis minutis 7 : 8 armato. Femora postica tertia parte apicali lineari, subtus margine externo toto, interno dimidia parte apicali dense dentatis. Tibiæ anticæ supra teretes, subplanatæ, extus spina apicali instructæ, subtus utrinque spinis 2. Tibiæ utrinque foramen elongatum angustum subconchatum præbentes. Tibiæ intermediæ basin versus compressæ, leviter dilatatæ, spina apicali in margine interno, subtus utrinque spinulosæ. Tibiæ posticæ compressæ, femoribus breviores. Ovipositor gracilis basi obtusangulatim incurvus, dehinc subrectus, gradatim attenuatus, marginibus integris, apice obtuso.

♀. Long. corp. 27·5; pronot. 7·5; elytr. 40, lat. 17·5; femor. post. 18·5; ovipos. 6 millim.

Figures:—Fig. 12, the female insect.—Fig. 13, ditto, from above.—Fig. 14, the head, from in front.—Fig. 15, the end of the abdomen, ♀.

Hab. Brazil (*Mus. Genavense*).]

ISCHYRA, Brunn.

Ischyra, Brunner v. W. Monogr. der Phaneropt. p. 343.

Up to the present time females only were known of this genus, and from South America.

1. **Ischyra frutetorum,** sp. n.

♂. Prasina. Vertex subrotundatus; ejus pars antica inter antennas trapezina, leviter arcuata, leviter sulcata, apice truncata, subbituberculata, quam primus articulus antennarum duplo latior, cum scutello faciali angulum obtusum formans. Fastigium frontis illo paulo latius, subincisum, angulis rotundatis. Pronotum disco subplano, ruguloso, ad sulcum typicum transverse depresso, utrinque punctis minimis nigris subtilibus consperso, margine antico sinuato, postico rotundato, leviter parabolico; canthi rotundato-acuti. Lobi laterales altiores quam latiores, infra parabolice rotundati, margine antico supra sinuato. Elytra ovato-lanceolata, subcoriacea, dense punctata, reticulato-rugosa; venis et venulis expressis. Vena humeralis venæ discoidali contigua, vena mediastina brevissima, crassa, cum basi venæ humeralis fusa. Vena discoidalis prope apicem ramum in margine suturali perductum emittens. Vena media ante medium oriens, furcata, ejus ramus primus cum vena ulnari confluens, ramus secundus ante medium curvatus. Vena ulnaris subrecta, ramos 3 ad marginem suturalem emittens. Discus punctis eburneis raris irregulariter conspersus. Campus tympanalis elytri dextri areolam vitream piriformem, per venam rectam basin haud attingentem divisam, præbens. Lobi mesosterni ovati, acuti; lobi metasterni triangulares. Femora postica subtus in utroque margine spinulosa.

♂. Long. corp. 20; pronot. 6·5; elytr. 37, lat. 11; femor. post. 19 millim.

Hab. GUATEMALA (*Mus. Genavense*).

2. **Ischyra vepretorum,** sp. n.

♂. Præcedenti simillima. Vertex apice illo speciei laudatæ paulo angustior, subfoveolatus, sulcatus. Primus articulus antennarum quam in specie laudata latior; vertex propter hoc quam ille haud duplo latior. Fastigium frontis cum vertice per sulcum transversum conjunctum. Pronotum longius, postice rotundatus subincisus, arcu obtusiore, in medio minus productus. Elytra semicoriacea, punctata, polygonali-reticulata venisque prominulis, punctis eburneis nullis. Laminæ infra-genitalis cesticula styligera haud producta.

♂. Long. corp. 23; pronot. 7; elytr. 42, lat. 13; femor. post. 21 millim.

Hab. CENTRAL AMERICA (*Mus. Genavense*).

Possibly a variety of the preceding ?

PETALOPTERA, Sauss.

Petaloptera, Saussure, Rev. et Mag. Zool. (2) xi. p. 205 (1859); Brunner v. W. Monogr. der Phaneropt. p. 345.

1. **Petaloptera zendala,** Sauss. (Tab. XVII. figg. 16-18, ♀.)

Petaloptera zendala, Sauss. Rev. et Mag. Zool. (2) xi. p. 205; Brunn. v. W. Monogr. der Phaneropt. p. 346. 1, t. 7. fig. 100.

Læte viridis. Vertex apice truncatus, subtus et apice sulcatus, subemarginatus. Elytrorum rami venæ ulnaris utrinque per lineas punctorum nigrorum marginati (saltem basi).

♂. Cerci teretes regulariter arcuati, gradatim attenuati, acuminati. Lamina infra-genitalis carinata, stylis crassiusculis, longiusculis, instructa.

♀. Long. corp. 25; pronot. 7; elytr. 40, lat. 12·5; femor. post. 21; ovipos. 5 millim.

♂. Long. corp. 24; pronot. 7; elytr. 38, lat. 12; femor. post. 21 millim.

FIGURES:—Fig. 16, the female insect.—Fig. 17, the head, from above.—Fig. 18, ditto, from in front.

Hab. MEXICO, Cordova (*Saussure*); GUATEMALA, Capetillo (*Champion*); COSTA RICA.

2. **Petaloptera filia,** Brunn.

Petaloptera filia, Brunn. v. W. Monogr. der Phaneropt. p. 346. 2.

Læte viridis. Vertex apice acuminatus. Elytra ramulis ulnaribus punctis nigris obsoletis notata.

Hab. MEXICO.

Unknown to us.

SYNTECHNA, Brunn.

Syntechna, Brunner v. W. Monogr. der Phaneropt. p. 347.

a. Statura minore. Elytra margine postico rectissimo. Tibiæ anticæ subsulcatæ.—1. *tarasca,* Sauss.

aa. Statura majore. Elytra margine postico subrotundato. Tibiæ anticæ distincte sulcatæ.—[2. *olivaceo-viridis*, Brunn.]

1. **Syntechna tarasca,** Sauss. (Tab. XVII. figg. 14, 14 *a*, 15, ♂.)

Phylloptera tarasca, Sauss. Rev. et Mag. Zool. (2) xi. p. 203 (1859).

Syntechna tarasca, Brunn. v. W. Monogr. der Phaneropt. p. 348. 2.

♂. Cerci teretes, paulum incurvi, apice obtuse rotundati, unguiculo nigro minimo armati. Lamina infragenitalis truncata, apice leviter incisa, stylis minimis instructa.

FIGURES :—Fig. 14, part of the male insect.—Fig. 14 *a*, ditto, natural size.—Fig. 15, pronotum, elytron, and wing, in profile.

Hab. MEXICO, Orizaba (*H. H. Smith*), Michoacan, Putla ; COSTA RICA.—COLOMBIA, Bogota.

[2. **Syntechna olivaceo-viridis,** Brunn.

Syntechna olivaceo-viridis, Brunn. v. W. Monogr. der Phaneropt. p. 348, t. 7. fig. 101 ; Bolivar, Artrop. del Viaje al Pacífico, p. 57 (♂) (1884).

Hab. COLOMBIA ; VENEZUELA ; ECUADOR.]

APOBALLA, Brunn.

Apoballa, Brunner v. W. Monogr. der Phaneropt. p. 348.

1. **Apoballa errabunda,** Brunn.

Apoballa errabunda, Brunn. v. W. Monogr. der Phaneropt. p. 349, t. 7. fig. 101.

Pallide viridis. Verticis apex truncatus, subrotundatus, anterius primo articulo antennarum æque latus, superne puncto impresso. Pronotum lævigatum, supra planum, canthis de reliquo complete rotundatis. Elytra parum coriacea, sat angusta, margine antico et postico parum arcuatis, apice rotundato. Vena media longe ante medium venæ principalis oriens, ejus parte dimidia furcata, ramis flexuosis. Vena ulnaris sulcata, obsolete triramosa, apice cum ramo postico venæ mediæ confluens vel per venulam cum illa conjuncta. Femora postica basi crassiuscula, subtus biseriatim spinosa. Tibiæ gracillimæ, anticæ et intermediæ teretes, in utroque margine subtus remote spinulosæ ; posticæ valde spinosæ. Metasterni lobi rotundato-trigonales ; mesosterni lobi producti.

♀. Ovipositor obtusangulatim curvatus, apice attenuatus, lævigatus; marginibus integris, pilosis; valva superiore rotundato-acuminata, apice punctata; infera angusta, apice subtiliter rugulosa, rotundato-truncata.

♂. Campus analis elytrorum in medio et prope basin, inter venam axillarem et stridulantem, vitta transversa nigrescente, scilicet in areolis et in punctis nigra (vitta postica in elytro dextro frequenter obsoleta). Cerci teretes, ultra medium valde incurvi, apice graciliter transverse producti, ungue brevissimo nigro. Lamina infra-genitalis plena, subcarinata, acute-trigonali incisa, stylis sat brevibus instructa.

♀. Long. corp. 30; pronot. 7; elytr. 43?, lat. 12·5; femor. post. 24; ovipos. 5 millim.

♂. Long. corp. 25; pronot. 6; elytr. 37, lat. 12; femor. post. 24 millim.

Hab. MEXICO (*Saussure*: ♂); GUATEMALA, Torola (*Champion*: ♀).

PHILOPHYLLIA, Stål.

Philophyllia, Stål, Recens. Orthopt. 2, p. 18 (1874); Brunner v. W. Monogr. der Phaneropt. p. 349.

1. **Philophyllia guttulata,** Stål.

Philophyllia guttulata, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 40 (1873); Recens. Orthopt. 2, p. 42; Brunn. v. W. Monogr. der Phaneropt. p. 350. 1, t. 7. fig. 102.

"Læte viridis, nitida. Fastigium verticis articulo primo antennarum parum latius, sulcatum. Caput sub oculis vitta alba, nitida ornatum, in angulum anticum loborum deflexorum pronoti extensa. Elytra basi vitta lata eburnata, carnea, ornata, campo radiali et ulnari lineolis minimis, confertissimis, longitudinaliter striolatis. Lobi meso- et metatarsi margine exteriore recto."

♀. Long. corp. 33; pronot. 9·5; elytr. 60, lat. 15; femor. post. 33; ovipos. 7 millim.

♂. Long. corp. 32; pronot. 9; elytr. 57, lat. 14; femor. post. 31 millim.

Hab. MEXICO, Orizaba (*Mus. Genavense*), Oaxaca (*Mus. Vind. Cæs.*), Temax in N. Yucatan (*Gaumer*); GUATEMALA, Rio Maria Linda (*Champion*).

Group **STEIRODONTIITES.**

Steirodontia, Brunner v. W. Monogr. der Phaneropt. p. 356.

This group includes the largest species of the tribe Phanopterinæ, in which the dorsal field of the male elytra presents the most typical characters (*cf. anteà*, p. 312). In the females the dorsal field of the right elytron has its inner margin hyaline, limited or divided by a stout longitudinal vein, and pectinated by thick transverse venulæ; outside the longitudinal vein it is closely reticulated, with more or less hyaline cells. On the right elytron the speculum is large and membranaceous. The ulnar vein of the wings often bears four branches.

STILPNOCHLORA, Stål.

Phylloptera, Serville, Hist. Nat. Ins. Orthopt. p. 402 (part.); Burmeister, Handb. d. Ent. ii. p. 691.

Stilpnochlora, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 40; Recens. Orthopt. 2, p. 19; Brunn. v. W. Monogr. der Phaneropt. p. 358.

Synopsis specierum.

a. Canthi laterales pronoti subintegri, in prozona tantum per sulcum anticum plus minus incisi; in metazona nigri.

b. Canthi laterales prozonæ de reliquo integri. Pronoti discus angustior, marginibus subrectis anterius convergentibus.

c. Elytra tota prasina.

d. Pronoti limbus posterior concolor vel linea nigra marginatus.—1. *marginella*, Serv.

dd. Pronoti limbus posterior vitta latiuscula nigra marginatus.—2. *tolteca*, Sss.

cc. Elytrorum vena analis (seu canthus externus campi dorsalis) nigra. Pronotum eodem modo pictum quam in *S. marginella*; tibiis posticis supra latioribus.—3. *azteca*, Sss.

bb. Canthi laterales prozonæ leviter crenulati. Pronoti discus latior, canthis anterius arcuatis. —[5. *ovalifolia*, sp. n.]

aa. Canthi laterales pronoti subcristati, in prozona profunde trilobati, postice rotundato-crenulati. —[4. *incisa*, Brunn.]

1. **Stilpnochlora marginella**, Serv.

Phylloptera marginella, Serv. Hist. Nat. Ins. Orthopt. p. 405 (1839).

Stilpnochlora marginella, Stål, Recens. Orthopt. 2, p. 44; Brunn. v. W. Monogr. der Phaneropt. p. 359. 1, t. 8. fig. 108.

Phylloptera thoracica, Burm. Handb. d. Ent. ii. p. 693.

Microcentrum thoracicum, Scudd. Bost. Journ. Nat. Hist. vii. p. 447.

Phylloptera couloniana, Sauss. Rev. et Mag. Zool. (2) xiii. p. 128 (♀) (1861).

♀. Campus dorsalis dexter intus late hyalinus, in secunda vena axillari venulis perpendicularibus (externis ramosis) dense reticulatus.

♂. Vena stridulans elytri sinistri unica, crassissima, nonnunquam tamen secundam venam transversam tenuem præbens. In elytro dextro vena transversa basi incrassata; specula grandia, hyalina.

♀. Long. corp. 35–39; pronot. 11–12; elytr. 65–70, lat. 23–27; femor. post. 34–40; ovipos. 7 millim.

♂. Long. corp. 30; pronot. 8–9; elytr. 55–60, lat. 18–20; femor. post. 23 millim.

Hab. MEXICO, San Blas (*Schumann*), Teapa in Tabasco (*H. H. Smith*), Temax in N. Yucatan (*Gaumer*); GUATEMALA, San Isidro (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA (*Rogers*); PANAMA, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA, Colombia, Guiana, Peru, Brazil; ANTILLES, Cuba.

2. **Stilpnochlora tolteca**, Sauss. (Tab. XVII. figg. 19, 20, ♀.)

Phylloptera tolteca, Sauss. Rev. et Mag. Zool. (2) xi. p. 203 (1859).

Stilpnochlora tolteca, Brunn. v. W. Monogr. der Phaneropt. p. 360. 2.

♀. Pars membranacea campi dorsalis elytri dextri utrinque ad venam axillarem 2^{m} venulis transversis pectinata, his intus ad marginem perpendicularibus, extus obliquis.

♂. Elytrum dextrum vena transversa unica, vel secundam subtilem præbens. Elytri dextri vena transversa apice crassa, dehinc in margine externo speculi attenuata, hoc a medio subtili. Vena postaxillaris 2^{a} (margo internus speculi) crassissima. Speculum trigonale partim coriaceum.

♀. Long. corp. 29–32; pronot. 9; elytr. 64–70, lat. 21–23; femor. post. 33–40; ovipos. 6 millim.

♂. Long. corp. 27; pronot. 8; elytr. 55, lat. 17; femor. post. 32 millim.

FIGURES:—Fig. 19, elytron and wing of the female.—Fig. 20, anterior part of the body, ♀.

Hab. Mexico, Cuernavaca, Misantla (*Saussure*); Guatemala, El Reposo (*Champion*); Costa Rica (*Biolley*).

3. **Stilpnochlora azteca,** Sauss. (Tab. XVII. figg. 21–23, ♀.)

Phylloptera azteca, Sauss. Rev. et Mag. Zool. (2) xi. p. 203 (1859).
Stilpnochlora azteca, Brunn. v. W. Monogr. der Phaneropt. p. 360. 3.
? *Steirodon quadratum,* Scudd. Proc. Bost. Soc. Nat. Hist. xii. p. 237. 4 (♂) (1868).

♀. Pars hyalina marginalis campi dorsalis elytri dextri angusta, intus ad venam axillarem venulis perpendicularibus reticulata; extus ad illam venis irregularibus reticulata.
♂. Campus tympanalis dexter venis transversis 2.
♀. Long. corp. 40–43; pronot. 7–12; elytr. 75–82, lat. 25–27; femor. post. 36–43; ovipos. 7 millim.
♂. Long. corp. 31; pronot. 9–10; elytr. 60–64, lat. 19–20; femor. post. 32 millim.

Figures:—Fig. 21, the female insect.—Fig. 22, hind tibia, from above.—Fig. 23, head and pronotum, magnified.

Hab. Mexico, Cordova (*Höge*), Amula in Guerrero (*H. H. Smith*); Guatemala, Vera Paz (*Champion*), Chamiquin (*Conradt*); Costa Rica (*Van Patten*).

[4. **Stilpnochlora incisa,** Brunn.

Stilpnochlora incisa, Brunn. v. W. Monogr. der Phaneropt. p. 361. 4.

Hab. Peru.]

[5. **Stilpnochlora ovalifolia,** sp. n.

♀. Crassa, prasina. Staturæ *S. toltecæ.* Pronotum obscure viride (saltem postice); ejus discus latus, in lobo antico ad occiput coarctatus; sulcus anterior profundus, canthi ab illo distinctissime incisi; canthi prozonæ inter sulcos per sulculos numerosos incisi, rotundato-multicrenulati. Sulcus posterior late impressus, canthos insecans. Metazona brevis nigro-marginata, margine postico parum arcuato, marginibus lateralibus superne verrucoso-crenatis. Elytra lata, quam in reliquis speciebus breviora, campo laterali elliptico, margine infero sat fortiter arcuato, margine supero sicut in *S. azteca* arcuato; quam in *S. tolteca* apice minus truncato. Ramus venæ principalis ante medium oriens. Campus analis (seu dorsalis) elongatus crasse confertim punctatus. Tibiæ anticæ latere interno infra tympanum impressione profunda notatæ. Tibiæ posticæ graciles, sicut in *S. tolteca,* rectæ vel subrectæ. Ovipositor incurvus.
♀. Long. corp. 24; pronot. 10·5; elytr. 67, lat. 25; camp. dors. elytr. 24; femor. post. 35·5; ovipos. 7 millim.

Hab. Brazil (*Mus. Genavense*).

This species is remarkable on account of its wide form. The pronotum is broad above, rather short. The elytra, also, are shorter and more rounded than in the other species of the genus; they are two and a half times the length of the dorsal field, while in *S. tolteca* they are more than three times as long as the dorsal field; the dorsal field is elongate. In the form of the pronotum this species makes a sort of transition to *S. incisa*; but in the latter the margins of the anterior lobe are very strongly trilobed, while in *S. ovalifolia* they are only feebly cut by numerous small sulci, and much less strongly crenulated than the margins of the posterior lobe.]

PEUCESTES, Stål.

Peucestes, Stål, Recens. Orthopt. 2. p. 19 (1874) ; Brunner v. W. Monogr. der Phaneropt. p. 363.
Steirodon, Serville (partim).

Synopsis specierum.

a. Metasternum retro coarctatum, incisum, lobis 2 triangularibus terminatum. Femora scrobiculata ; postica haud cristata. Tibiæ anticæ foraminibus rimatis ; posticæ subrectæ. Pronotum supra rugulosum, margine antico haud profunde sinuato.

b. Pronotum supra longius quam latius, retro vix coarctatum ; marginibus parum dilatatis ; dentibus brevibus crenatis ; margine antico in medio haud angulato. Elytra apice retro plus minus oblique truncata, margine postico sinuato.

c. Elytra ♀ longa, angustiora, plus quam triplo longiora quam latiora, margine costali minus arcuato.—1. *coronatus*, Stål.

cc. Elytra ♀ breviora ac latiora, plus quam duplo longiora quam latiora, margine costali valde arcuato, apice minus acuminato.—2. *latipennis,* sp. n.

bb. Pronotum supra latius quam longius, retro distincte coarctatum, marginibus lateralibus valde arcuatis ; margine anteriore subangulato.

c. Pronoti margines minute dentati. Elytra ♀ elongata, angustiora, plus quam triplo longiora quam latiora, illis *P. coronati* similia.—3. *dentatus,* Stål.

cc. Pronoti margines crasse longe dentati. Elytra ♀ latissima, plus quam duplo longiora quam latiora, apice rotundata ; margine anteriore valde arcuato. Alæ in requiete elytris æquilongæ. Elytra longa, angusta, plus quam triplo longiora quam latiora.—4. *championi,* sp. n.

aa. Metasternum retro obtusum, truncatum vel subbilobatum. Femora lævia ; postica superne apice cristata. Tibiæ anticæ foraminibus conchatis ; posticæ arcuatæ. Pronotum lævisculum, margine antico profunde sinuato.—5. *striolatus,* Stål.

1. **Peucestes coronatus,** Stål. (Tab. XVIII. fig. 1, ♀.)

Peucestes coronatus, Stål, Recens. Orthopt. 2, p. 45 ; Brunn. v. W. Monogr. der Phaneropt. p. 366. 2.

♀. *P. dentato* similis. Apex verticis tamen quam primus articulus antennarum duplo latior. Fastigium frontis bituberculatum. Pronotum supra longius quam latius, rugosum ; margine antico subsinuato, in medio transverso ; margine posteriore minime arcuato ; disci margines laterales parum arcuati, parum ascendentes, in medio quam postice invicem parum magis remoti, denticulis acutis (utrinque 15) crenatis ; discus rugosus, sulco postico minus lato ac minus profundo quam in *P. dentato.* Elytra, alæ, et pedes sensim illis speciei laudatæ similia. Lamina supra-analis appendicibus brevibus, apice subnodosis instructa.

♀. Long. corp. 52 ; pronot. 15 ; elytr. 84, lat. 28, camp. marg. 13 ; femor. post. 37 ; ovipos. 6 millim.

FIGURE :—Fig. 1, head and pronotum of the female.

Hab. MEXICO, Cordova ; PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA, Medellin.

Obs.—We find no appendices of the supra-anal plate in the Chiriqui example, as in *P. dentatus*, and this does not seem to be the result of an accident.—Brunner v. Wattenwyl (Addit. p. 81) unites *P. coronatus* with *P. dentatus.* Our specimens seem to belong to two distinct species.

2. **Peucestes latipennis,** sp. n. (Tab. XVIII. fig. 2, ♀.)

♀. *P. championi* affinis. Verticis apex primo articulo antennarum fere duplo latior, leviter sulcatus. Fastigium frontis oculis æquilatum, tuberculis parum prominulis, supra convergentibus. Pronotum supra paulo longius quam latius, margine antico toto subsinuato; disci marginibus lateralibus parum arcuatis, parum dilatatis, dentibus obtusis, brevibus, crenatis; sulco postico parum impresso; margine postico arcuato. Elytra ampla, apice rotundata, parum elongata; campo dorsali dextro dense reticulato, margine interno membranaceo venulis parum oblique instructis. Alæ elytra in requiete superantes. Lobi sternales acuti. Pedes sensim illis speciei laudatæ conformes. Femora postica supra magis planata. Tibiæ intermediæ margine supero prope basin dilatatæ. Tibiæ posticæ quam femora parum breviores. Lamina supra-analis appendicibus sat longis instructa. Ovipositor brevissimus; valvis superioribus (externis) rectis, latiusculis, apice parabolico-rotundatis; extus in medio ruga obliqua transversa notatis; inferis illis vix longioribus, apice membranaceis, oblique truncatis, apice superne acutangulis. Lamina infra-genitalis apice fissa, incisura sat profunda, dentibusque 2 longioribus obtusis terminata.

♀. Long. corp. 47; pronot. 14; elytr. 65, lat. 28, camp. marg. 13; femor. post. 37; ovipos. 8 millim.

Figure :—Fig. 2, the female insect, natural size.

Hab. Mexico (*Mus. Genavense*).—Colombia.

3. **Peucestes dentatus,** Stål. (Tab. XVIII. figg. 3–5.)

Phaneroptera citrifolia, Blanch. Hist. nat. des Ins. iii. p. 24, t. 7 (1840) (nec Stoll).

Peucestes dentatus, Stål, Recens. Orthopt. 2, p. 45 (1874); Brunn. v. W. Monogr. der Phaneropt. p. 365. 1.

♀. Prasinus. Apex verticis primo articulo antennarum duplo latius, sulcatus, apice subbituberculatus; fastigium frontis latum, rotundato-subbituberculatum, margine supero subinciso. Pronotum supra latum, æque latum ac longum; margine antico leviter sinuato vel inter angulos subrecto, nonnunquam in medio subproducto. Disci margines laterales subhorizontales leviter ascendentes, arcuati; denticulis parum longis, utrinque 15–20 acutis vel partim rotundatis crenati. Margo posterior leviter arcuatus, in medio subproductus. Discus ubique rugosus, sulco postico profunde impresso. Elytra longissima, modice lata; margine costali basi valde, ultra medium modice, arcuato; margine suturali longe leviter sinuato, basi arcuato, itaque subsigmoidali, in parte terminali oblique truncato; apice elytri propter hoc minute rotundato-angulato. Campus discoidalis in tertia parte basali quam campus marginalis vix latior. Campus dorsalis dexter late irregulariter reticulatus. Alæ acuminatæ, in quiete elytra parum superantes. Femora subscrobiculata; 1ª et 2ª subtus margine antico spinis 3; postica supra deplanata, subtus utrinque remote spinosa. Tibiæ anticæ supra planatæ; foraminibus apertiusculis. Tibiæ posticæ femoribus æquilongæ, subtus rectæ. Metasternum retro-coarctatum, lobis plus minus profunde divisis, acutiusculis vel apice rotundatis. Lamina supra-analis appendicibus gracilibus, compressis, arcuatis, apice obtusis instructa. Ovipositor gracilis, basi haud dilatatus.

♀. Long. corp. 48; pronot. 15; elytr. 80, lat. 25, camp. marg. 12; femor. post. 38; ovipos. 7 millim.

Figures :—Fig. 3, the female insect.—Fig. 4, head and pronotum of the male.—Fig. 5, ditto of the female.

Hab. ? North America, Texas (*Mus. Genavense*).—Panama, Chiriqui.

Obs.—We possess a specimen, labelled Texas (?), which has each of the lateral borders of the pronotum armed with twenty acute teeth, while the example from Chiriqui has only fifteen teeth, these being wider and rounded; there is no other difference to be found between them.

4. **Peucestes championi,** sp. n. (Tab. XVIII. figg. 6–9.)

Prasinus. Apex verticis quam primus articulus antennarum vix latior, longe sulcatus. Fastigium frontis oculis æquilatum, eodem modo quam vertex sulcatus, rotundato-bituberculatus, tuberculis subconver-

gentibus. Pronotum densissime rugulosum, latius quam longius, margine antico bisinuato, obtusangulo; disco postice plicis 2 rotundatis elevatis, ac sulco inter illos profunde canaliculato. Carinæ laterales subhorizontales, late compresso-cristatæ, longe acute dentatæ, utrinque dentibus maximis 12. Lobi laterales longiusculi, rotundati, valde longiores quam altiores. Elytra ♀ amplissima, parum longa, ♂ ♀ a tibiis posticis valde superata, apice rotundata, campo marginali quam in *P. coronato* minus lato, margine suturali recto, apice arcuato. Alæ in requiete elytra haud superantes.

♀. Campus dorsalis elytri dextri margine interno venulis crassis reticulato, inter venulas punctis hyalinis et nodulis opacis raris, extus ad venam axillarem dense reticulatus, punctisque hyalinis notatus. Lobi mesosternales triangulares, retro-producti, acutanguli. Femora omnia subscrobiculata; postica supra planata, subsulcata. Tibiæ anticæ foraminibus internis apertis. Tibiæ posticæ quam femora subbreviores, basi sat fortiter ampliata. Lamina supra-analis appendicibus gracilibus, basi compressis, apice dextro truncato, sinistro magis acuminato, instructa. Lamina infra-genitalis canaliculata, apice anguste incisa, brevissime rotundato-bidentata.

♂. Gracilior. Pronotum minus latum, sed vix latius quam longius. Lobi metasternales magis divergentes, extus acuminati, margine externo sinuato. Elytra elongata, valde angustiora, parallela, apice parabolica; margine costali, basi et apice exceptis, vix arcuato. Campus tympanalis sinister venis transversis 2; prima crassissima, secunda subangulata, extus crassa; area ano-axillari hyalina;—dexter in medio valde reticulatus, speculis hyalinis, mediano lato. Tibiæ posticæ femoribus æquilongæ; femoribus supra planulis. Cerci laminam supra-analem vix superantes, basi crassi, apice graciles, obtusi. Lamina infra-genitalis compressa, apice subincisa, stylis acutis instructa.

♀. Long. corp. 54; pronot. 17·5; elytr. 77, lat. 31, camp. marg. 14; femor. post. 9; ovipos. 9 millim.

♂. Long. corp. 45·5; pronot. 14·5; elytr. 72, lat. 21, camp. marg. 9·5; femor. post. 36 millim.

Figures:—Fig. 6, the male insect.—Fig. 7, head and pronotum of the male, from above.—Fig. 8, ditto of the female.—Fig. 9, an elytron of the female.

Hab. Guatemala, Panzos in Vera Paz (*Champion*: ♂); Costa Rica, Caché (*Rogers*: ♀).

5. **Peucestes striolatus,** Brunn.

——, Rösel, Ins.-Belust. ii. p. 107, t. 16. fig. 1 (1749).

Locusta citrifolia, Stoll, Sauter. t. 4 *a*. fig. 12 (nec de Geer).

Peucestes striolatus, Brunn. v. W. Monogr. der Phaneropt. p. 366. 3; Bolivar, Artrop. del Viaje al Pacífico, p. 58 (♀) (1884).

Validus, prasinus. Caput minus grande, vertice et frontis fastigio angustioribus; hic superne distincte minute bituberculatus. Pronotum superne longius quam latius, margine antico valde sinuato, marginibus lamellaribus ad superum fortiter reflexis, valde compressis, rotundato-lobulatis; disco valde concavo, læviusculo, fulvescente. Lobi laterales paralleli, inferius haud attenuati, latissime rotundati. Elytra elongata, margine postico haud sinuato, subarcuato, apice ut in *P. coronato* subacuminato; tota superficie obsolete transverse fusco-lineata. Campus dorsalis elytri dextri fere opacus, coriaceo-reticulatus et punctatus; punctis hyalinis notatus, margine interno venulis perpendicularibus reticulatus. Alæ ultra elytra prominulæ. Femora haud tuberculata, 1ª et 2ª margine antico spinuloso, 3ª supra planata, marginibus haud prominulis, apice compresso-cristata. Tibiæ anticæ supra planæ, basi dilatatæ, foraminibus conchatis instructæ; intermediæ valde compressæ, margine antico spinis 6 armato. Tibiæ posticæ valde compressæ, arcuatæ. Segmentum anale in processibus 2 longis, latis, lamellaribus, apice arcuato-acuminatis productum. Segmentum penultimum supra in trigonum acutum fissumque productum, vel si mavis in processibus 2 cultriformibus, contiguis, apice arcuatis productum. Ovipositor supra haud incurvus, subtus valde arcuatus, ultra medium dilatatus, apice obtusus.

♂. Segmentum ultimum dorsale in processum angustum, apice emarginatum productum; cerci brevissimi sub illo processu absconditi. Lamina infra-genitalis tricarinata, attenuata, margine postico rotundato-emarginato; stylis brevibus instructa. (*Brunner.*)

Var. Pronoti cristæ parum ad superum reflexæ.—[Central America.]
♀. Long. corp. 48; pronot. 13; elytr. 88, lat. 30, camp. marg. 13; femor. post. 40; ovipos. 8 millim.
♂. Long. corp. 42; pronot. 12; elytr. 75, lat. 26, camp. marg. 11; femor. post. 39 millim.

Hab. CENTRAL AMERICA (*Mus. Genavense*: ♀); PANAMA (*Mus. Vind. Cæs.*).—SOUTH AMERICA, Cayenne, Bahia, Pernambuco, Peru.

POSIDIPPUS, Stål *.

Posidippus, Stål, Recens. Orthopt. 2, p. 20 (1874); Brunner v. W. Monogr. der Phaneropt. p. 367; Additam. p. 183.
Frontinus, Stål, loc. cit.

1. **Posidippus validus**, sp. n. (Tab. XVIII. figg. 10, 11, ♀.)

♀. Maximus, totus prasinus. Facies transverse convexa; vertex apice haud deflexus. Pronotum latiusculum, margine anteriore haud dentato, in medio transverso, angulis antrorsum productis; costis lateralibus prominulis, a supero et a latere arcuatis, dentibus rotundatis utrinque 10–12 instructis. Elytra latissima, in dimidia parte distali quam in *P. citrifolio*, L., minus attenuata, apice rotundata; vena media anguste furcata; vena principali apice triramosa, ramis valde obliquis. Campus dorsalis dextri elytri irregulariter reticulatus, areolis minutis hyalinis. Alæ in quiete elytra haud superantes, apice rotundatæ; campi antici apex parum acutus. Tibiæ anticæ supra spinula nulla, intermediæ spinulis 2 armatæ. Tibiæ posticæ haud dilatatæ, apice tantum leviter attenuatæ sicut in *P. citrifolio*, L.
♀. Long. corp. 50; pronot. 14, lat. 12; elytr. 81, lat. 29, camp. marg. 14; femor. post. 39; ovipos. 8 millim.

FIGURES:—Fig. 10, an elytron of the female.—Fig. 11, head and pronotum, from above.

Hab. NICARAGUA, Chontales (*Janson*).

This is the largest species of the genus. It is distinguished by the crests of the pronotum, and by its very wide and obtuse elytra, these latter being much wider than in *P. citrifolius*, L. The wings are shorter than the elytra, and in repose do not extend beyond them; they are obtuse (not acuminate) at the tip. *P. validus* is closely allied to *P. ståli*, Brunn., from Brazil, but the anterior tibiæ are without spines.

Tribus CONOCEPHALINÆ †.

Conocephalidæ, Brunner v. W.;—Redtenbacher.

Tarsi depressi, articulo primo et secundo utrinque longitudinaliter sulcato, tertio saltem utrinque laminatim dilatato. Foramina tibiarum anticarum raro aperta vel conchata. Verticis rostrum ultra scrobicula antennarum haud prominens. Verticis apex itaque libere prominens, supra haud sulcatus, productus

* Scudder states that his genus *Steirodonopis* is closely allied to *Posidippus*, Stål, but differs from it in the considerable basal compression and vertical expansion of the middle and hind tibiæ [Proc. Bost. Soc. Nat. Hist. xvii. p. 259 (1875); xxvii. p. 214 (1896).—*S. bilobata*, Sc. (Peru)].

† Principal recent works referred to for this tribe:—

C. STÅL, Recensio Orthopterorum, part 2. Stockholm, 1874.

ALPH. PICTET, Locustides Nouveaux ou peu connus du Musée de Genève, 1888 (Mém. de la Soc. de Physique et d'hist. Nat. de Genève, xxx.).

JOSEPH REDTENBACHER, Monographie der Conocephaliden [Verh. zool.-bot. Ges. Wien, xli. (1891)]. A very complete monograph of the whole tribe, which we have followed in this work.

vel obtusus, subtus a fastigio frontis remote sejunctus vel cum illo contiguus ac per sulcum ab illo separatus. Pronotum sulcis transversis plerumque obsoletis, saltem posteriore nullo. Tibiæ anticæ supra teretes, utrinque haud sulcatæ. Tibiæ posticæ supra utrinque spina apicali, subtus utrinque spinis apicalibus armatæ. Elytra marium tympano instructa. (*Brunner*, *Redtenbacher*.)

In this tribe the elytra when at rest are placed as in the Phaneropterinæ, but they are generally narrow and elongate, with less characteristic veins. In the female the dorsal field is coriaceous, with the veins usually more or less obliterated. Normally there are visible, in addition to the anal vein, one or two regular longitudinal axillary veins. In the males we find a tambourine much as in the Phaneropterinæ (comp. *anteà*, p. 312).

In the *left elytron* (Tab. XIX. fig. 33) there is a stout transverse stridulating vein (*A*), sometimes much swollen and polished, attenuated towards the inner margin. Behind this vein there is a post-axillary field (*s*), in the shape of an elongate trapezoid; this field is limited at the base by a strong transverse vein (*z'*), which often has the appearance of a second stridulating vein, as in the Phaneropterinæ (comp. *anteà*, p. 312). Generally, the whole dorsal field is coriaceous, but in some genera the external and central cells become membranaceous and form a regular tambourine as in the right elytron (e. g., *Exacentrus*, *Copiophora*, &c.).

In the *right elytron* (Tab. XIX. fig. 34) the stridulating vein (*A*) is less strong than in the left elytron. The post-axillary area (*s*) is membranaceous and forms a brilliant speculum. The remaining cells of the middle part of the dorsal field are also frequently membranaceous, especially the ano-axillary cell (external speculum) (*e*).

The following description of figures 33 & 34 will give the explanation of the homologies of the male tambourine of the Conocephalinæ (comp. *anteà*, p. 312):— Figures 33 & 34 represent the basal part of the dorsal (musical) field of the elytra of *Copiophora cultricornis*. This species is selected for figuring because it has a membranaceous tambourine in both elytra.

Left elytron (fig. 33).—The ridge separating the dorsal from the lateral field is represented by the line *u*, formed by the ulnar vein. Inward of this, we find the straight and fine anal vein (*a*). The *first axillary vein* (*x*) which follows is fine at the base and soon bifurcates. Its inner branch becomes transverse and is much swollen to form the stridulating vein (*A*); its outer branch continues and forms the *post-axillary vein* (*z*) (the outer or first post-axillary vein which anastomoses in *u* with the anal vein, *a*). Starting near the base of the elytron, we also find the second axillary vein, which is double (*x'*, *x''*). This is strongly transverse: its two branches often become fused into one (*o*) and separate again, as shown in the figure; but they are always united on the inner margin and with the inner end of the stridulating vein (*A*), to afford the latter a solid support (which in the Gryllidæ is named the *anal* or *musical knot* (*n*)) (comp. *anteà*, p. 217). The second axillary vein (*x'*, *x''*) after its fusion in the *anal knot* curves outward and becomes more or less parallel with the

stridulating vein *A*, forming the vein *z'*, and anastomoses with the first post-axillary vein (*z*) next to *e*. (Its direction is indicated by the punctured line.) Moreover, it bifurcates in *b*; its inner branch (*z''*) forms the second post-axillary vein, which anastomoses with the first post-axillary vein (*z*), so as to close the central cell (*s*). This cell is the principal (*central* or *inner*) drum; it is also called the *central speculum* when it is membranaceous. The elongate cell (*e*) which remains between the *anal vein* and the *first axillary vein* is often also membranaceous, and forms the *outer drum* or *speculum*. The short vein (*c*) is only a connection to solidify the stridulating vein and the whole frame of the stridulating apparatus.

Right elytron (fig. 34).—The right tambourine is covered by the left one, and is generally more membranaceous. Its venation is also more modified to form the *ilex* (*i*), on which the stridulating vein of the left tambourine is rubbed to produce musical sounds. On the outer side we find unmodified veins as in the left elytron, the ulnar vein (*u*) forming the dorsal ridge and the anal vein (*a*).—The *first axillary vein* (*x*) is more oblique than in the left tambourine; its post-axillary portion (*z*) forms an angle with its basal portion (*x*), so that the outer speculum (*e*) is wider than in the left tambourine. The inner branch (*A*) of the first post-axillary vein is less transverse than the stridulating vein of the left tambourine. Moreover, the two branches of the *second axillary vein* do not fuse with the stridulating vein so as to form the anal knot (*k*) as in the left elytron.

There is, in fact, no anal knot; and the stridulating vein is only connected with the second axillary vein by the vein *c*. The two branches of the *second axillary vein* (*x'*, *x''*) remain free and form along the inner margin a sort of corneous shell, the *ilex* (*i*), on which the musical sounds are generated. If normal, as in the left elytron, the vein *x'* ought to bend round to form the transverse vein *z'*, as indicated by the punctured line; and the vein *x''* should form the vein *z''* (inner margin of the speculum) as in fig. 33; but the two branches of the second axillary vein (*x'*, *x''*) being broken, and thrown back against the inner margin to form the *ilex*, are thus separated from their post-axillary portions (*z'* and *z''*), so that their homologies are no longer apparent *. The consequence of this modification is that the second post-axillary vein (*z''*), being separated from its base (*x'*, *x''*), fuses with the stridulating vein *A*; or, in other words, the vein *A* is prolonged backwards to replace the normal vein (*z''*) and to close the speculum (*s*).

The Conocephalinæ principally inhabit Tropical America, very few of them occurring in the United States. The known genera and species of Central America are not numerous.

* In fig. 34 the vein *z'* is theoretically the continuation of *x'*, and *z''* is the continuation of *x''*, as in the left elytron; but *x''* being pushed back to the inner margin of the elytron, the vein *A* is prolonged to replace it, so as to complete the speculum.

Group CONOCEPHALITES.

Conocephalini, Redtenbacher, Monogr. der Conocephaliden, p. 90.

PANACANTHUS, Walk.

Panacanthus, Walker, Cat. Derm. Salt. ii. p. 332 (1869).
Martinezia, Bolivar, An. Soc. Esp. x. p. 494 (1881); Artróp. del Viaje al Pacífico, p. 82 (1884).

1. **Panacanthus spinosus**, Redt.

Panacanthus spinosus, Redt. Monogr. der Conoceph. p. 21, t. 3. fig. 1.

Hab. PANAMA.

Unknown to us.

COPIOPHORA, Serv.

Copiophora, Serville, Rev. méthod. p. 147 (1831); Hist. nat. des Ins. Orthopt. p. 512 (1839); Blanchard, Hist. nat. des Ins. iii. p. 26 (1840); Burmeister, Handb. der Ent. ii. p. 702 (1839), and in Germar's Zeitschr. für Ent. ii. p. 67 (1840); Stål, Recens. Orthopt. 2, pp. 9, 104 (1874); Pictet, Locust. Nouv. p. 44 (1888); Redtenbacher, Monogr. der Conoceph. p. 25.

Marium tympanum in ambobus elytris speculis duobus membranaceis instructum.

Synopsis specierum.

I.

a. Verticis processus elongatus :
  b. subtus apice compressus, dilatatus, a latere breviter acuminatus;
    c. haud lobatus.
      d. Capitis facies lævigata, nigro-maculata. Tibiæ intermediæ supra uniseriatim spinosæ. Ovipositor longissimus.—1. *cultricornis*, Pict.
      dd. Capitis facies punctata, immaculata. Tibiæ intermediæ biseriatim spinosæ. Ovipositor corpore et elytris computatis brevior.—2. *monoceros*, sp. n.
    cc. ante apicem lobatus. Tibiæ intermediæ biseriatim spinosæ.—3. *cochleata*, Redt.
  bb. a latere spiniformis;
    c. subtus rugose granulatus.—4. *cornuta*, de G.
    cc. subtus lævigatus;
      d. gracilis, longissimus, arcuatus. Elytra elliptica.—5. *rhinoceros*, Pict.
      dd. rectus, minus longus;
        e. plane spiniformis. Elytra angusta. Tibiæ intermediæ supra haud biseriatim spinosæ. Pronoti lobi laterales margine infero sinuato, angulo postico propterea leviter ad inferum producto. Ovipositor valde elongatus.
          f. Tibiæ intermediæ supra uniseriatim spinosæ.
            g. Ovipositor longissimus.—[6. *longicauda*, Serv. (Brazil).]
            gg. Ovipositor corpore paulo longior.—[*brevicornis*, Redt. (Brazil).]
          ff. Tibiæ intermediæ supra muticæ. Species minuta.—7. *azteca*, sp. n.

ee. subtus apice compresso-carinatus. Pronoti lobi laterales margine infero recto, angulo postico haud producto. Tibiæ intermediæ supra 6-spinosæ.

f. Facies polita. Elytra lanceolata, parum longa.—8. *capito,* St.

ff. Facies rugosa. Elytra elliptica, breviora.—[9. *cephalotes,* sp. n. (Brazil).]

aa. Verticis processus brevis, articulum primum antennarum vix superans.

b. Facies castanea. Elytra longiora.—10. *brevirostris,* St.

bb. Facies pallida. Elytra breviora.—[*coronata,* Redt. (Brazil).]

II.

1. *Femora anteriora et intermedia subtus*:

a. biseriatim spinosa.—[9. *cephalotes.*]

aa. uniseriatim spinosa.—*reliquæ species.*

2. *Tibiæ intermediæ supra*:

a. biseriatim spinosæ.—1. *cultricornis.*—2. *monoceros.*—3. *cochleata.*

aa. uniseriatim spinosæ.—3. *cochleata,* var.—4. *cornuta.*—5. *rhinoceros.*—[6. *longicauda.*]—8. *capito.*—[9. *cephalotes.*]—[*brevicornis.*]

aaa. muticæ.—7. *azteca.*

1. **Copiophora cultricornis,** Pict. (Tab. XIX. figg. 33, 34.)

Copiophora cultricornis, Pict. Locust. Nouv. p. 47, t. 2. fig. 23 (♀) (1888); Redt. Monogr. der Conoceph. p. 27.

Viridis. Verticis rostrum longum, compressum, subtus carinatum, a latere apice trigonali-acuminatum, ac mucrone minuto ad inferum curvato armatum; superne dimidia parte basali in canthis verruculosum. Facies lævigata, viridis, maculis minutis 6 per pares ordinatis (intermediis elongatis), necnon punctulis 4 in parte infera supra clypeo nigris (in lineam transversam exsertis), punctisque 2 in clypeo nigris ornata. Elytra femora postica valde superantia. Campus tympanalis sinister vena stridulente crassissima, nitida; area post-anali in utroque elytro pentagona, membranacea. Femora omnia in margine antico longe spinosa. Tibiæ intermediæ supra trispinosæ. Cerci breves, arcuati, truncati, subtus apice excepto, compresso-carinati. Lamina infra-genitalis obtusangulatim excisa.

♀. Long. 44; rostr. 7·5; pronot. 10; elytr. 56; femor. post. 24; ovipos. 76 millim.

♂. Long. 38; rostr. 7; pronot. 10·5; elytr. 47; femor. post. 22 millim.

FIGURES, comp. p. 374:—Fig. 33, the tambourine of the left elytron, magnified: *u, vena ulnaris,* forming the limit of the dorsal field; *a, v. analis*; *x, v. prima axillaris*; *z,* its continuation or *v. post-axillaris prima*; *n,* its anastomosis with the anal vein (*u*); *A,* its inner branch or *v. stridans*; *x′, x″,* the two parts of the *secunda v. axillaris,* confused in *o,* then separated again and emitting the connecting branch *c*; *u, nodus analis vel musicus*; *b,* point of division of the second axillary vein *x′, x″*; *z″,* normal continuation of the second axillary vein, or v. post-axillaris secunda; *z′,* the outer branch of the second axillary vein, reinforcing the support of the stridulating vein, *A*; *t,* connecting branch for the reinforcement of the same; *s, speculum centrale,* or central (inner) drum; *e, speculum externum* or external drum.—Fig. 34, the tambourine of the right elytron. The same letters designate the corresponding nervures. The two branches of the second axillary vein (*x′, x″*), after their conjunction in *o,* do not turn round the end of the stridulating vein *A,* to form the inner transverse vein *z′,* nor the external branch *z″,* as in the left tambourine, but are broken away from their branches, and thrust inward to border the inner margin of the elytron, so as to form the *trill-organ* (*ilex, i*) upon which the *v. stridulans* of the left tambourine rubs. The end of the inner branch *z″* thus fuses with the stridulating vein *A* and forms its continuation.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*), Chiriqui (*coll. Brunner*).

2. **Copiophora monoceros,** sp. n.

♀. Crassa, statura mediocri, viridis. Verticis rostrum ascendens, basi latiusculum, subdepressum, supra deplanatum, biseriatim crenatum, basi utrinque valde rotundato-tuberculatum, subtus acute carinatum, apice lamellari-compressum, utrinque ante tuberculos subcarinatum; ejus apex arcuato-mucronatus, latera plus minus granulata, fusco-punctata. Facies planata, lata, crasse haud profunde punctata, utrinque infra oculos haud distincte carinata; clypeus et labrum flava; mandibulæ nigræ. Pronotum valde punctatum; lobi laterales margine infero recto, haud sinuato, angulo postico itaque rotundato, haud producto. Elytra parum longa, modice lata, margine postico leviter sinuato, late reticulata. Tibiæ intermediæ supra spinis 3 : 2 vel 2 : 2 armatæ. Cerci longiusculi. Ovipositor mediocris, quam femora sesqui-longior, apice parum acutus. Lamina infra-genitalis carinata, retro-attenuata, apice sinuata.

♀. Long. 30; rostr. 6·5; pronot. 10; femor. post. 20; ovipos. 31 millim.

Hab. GUATEMALA, Teleman in Vera Paz (*Champion*).

This species resembles *C. cultricornis*, Pict., in the form of the vertical process of the head, which, however, is more compressed beneath before the tip and less narrow at the base, and in the rather stouter body. In the shape of the lateral lobes of the pronotum *C. monoceros* approaches *C. capito*, Stål, but it has the vertical process much more compressed at the base, with the apex more curved; the forehead is also punctate, while in *C. capito* it is polished. Like *C. cochleata*, the present species has a double row of spines on the intermediate tibiæ.

3. **Copiophora cochleata,** Redt.

Copiophora cochleata, Redt. Monogr. der Conoceph. p. 27, t. 3. fig. 4.

Hab. PANAMA, Chiriqui (*coll. Brunner*).

4. **Copiophora cornuta,** de Geer.

Locusta cornuta, de Geer, Mém. Ins. iii. t. 37. fig. 7 (1773); Blanch. Hist. nat. des Ins. iii. p. 26 (1840).

Copiophora cornuta, Serv. Hist. nat. des Ins. Orthopt. p. 514, t. 10. fig. 3; Burm. Handb. der Ent. ii. p. 703 (1839); Charp. Orthopt. Descr. et Depict. t. 43 (1841–1845); de Haan, Bijdr. Kenn. Orthopt. p. 211 (1842); Stål, Recens. Orthopt. 2, p. 104 (1874); Redt. Monogr. der Conoceph. p. 26.

? *Gryllus monoceros,* Stoll, Représ. des Spectr. &c. t. 17 *b*. fig. 65, t. 13 *a*. fig. 51 (1787).

Hab. COSTA RICA.—GUIANA; BRAZIL.

5. **Copiophora rhinoceros,** Pict.

Copiophora rhinoceros, Pict. Locust. Nouv. p. 48, t. 2. fig. 25 (♀); Redt. Monogr. der Conoceph. p. 28 (♂).

Hab. NICARAGUA (*coll. Brunner*); PANAMA, Volcan de Chiriqui (*Champion*).

[6. **Copiophora longicauda,** Serv.

Copiophora longicauda, Serv. Hist. nat. des Ins. Orthopt. p. 513 (1839); Rev. Méthod. p. 40 (1831);

Burm. Handb. der Ent. ii. p. 703 (1839) ; de Haan, Bijdr. Kenn. Orthopt. p. 211 (1842) ; Redt. Monogr. der Conoceph. p. 29.

Copiophora conspersa, Stål, Recens. Orthopt. 2, p. 104 (1874).

Copiophora licornis, Pict. Locust. Nouv. p. 45, t. 2. figg. 24, 24 *a* (1888).

? *Gryllus subulatus*, Stoll, Représ. des Spectr. &c. t. 13 *a*. fig. 51 (1787).

C. aztecæ simillimus. Verticis rostrum spiniforme, subtus tuberculo basali majore, utrinque tuberculo magno trigonali vel rotundato antrorsum vergente instructum, superne biseriatim granosum, seriebus ultra tuberculos productis. Elytra semicoriacea, punctis nigris conspersa, latiuscule reticulata. Tibiæ intermediæ supra spinis 3. Spinæ femorum majusculæ, basi incrassatæ, in femoribus anterioribus et intermediis basi macula callosa lutea notatæ. Ovipositor longissimus.—Mares frequenter minuti.

♀. Long. 46 ; pronot. 9·5 ; elytr. 47 ; femor. post. 22 ; ovipos. 60 millim.

♂. Long. 33 ; pronot. 7·5 ; elytr. 35 ; femor. post. 17 millim.

Hab. GUIANA ; BRAZIL.]

7. **Copiophora azteca,** sp. n. (Tab. XIX. fig. 1.)

Statura minore, viridis. Verticis rostrum longum, spiniforme, teres, subtus subcarinatum, utrinque minute tuberculatum, superne ante tuberculos biseriatim granosum, de reliquo politum. Facies lævigata ; labrum et mandibulæ intus rufa. Elytra angusta, femora parum superantia, subpellucida, crasse rugose elevato-reticulata, punctis nigris typicis conspersa ; areolis hyalinis, venis tantum opacis ; campo marginali areolis magnis hyalinis impleto. Femora postica subtus extus spinosa. Pedum spinæ quam in *C. longicauda* sensim minores, graciliores, pallidæ, apice minute nigro. Tibiæ intermediæ supra muticæ. Ovipositor longissimus, rectissimus, elytris sesqui-longior.

♀. Long. 26 ; pronot. 7·5 ; rostr. 4·5 ; femor. post. 21 ; ovipos. 48 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

Allied to *C. longicauda*, but much smaller, with unarmed intermediate tibiæ, and very wide, coarse, and prominent reticulation to the elytra, with hyaline cells in the marginal field. The lateral tubercles of the vertical process are very small, and the two lines of granulations above are short, not extending beyond the lateral tubercles.

8. **Copiophora capito,** Stål.

Copiophora capito, Stål, Recens. Orthopt. 2, p. 105 (1874) ; Redt. Monogr. der Conoceph. p. 28.

Copiophora carinata, Pict. Locust. Nouv. p. 46 (1888).

Crassa. Caput latum ; facie polita, sat plana, marginibus lateralibus infra oculos carinatis, subverruculosis. Verticis rostrum subtus ad apicem compressum, arcuatum, haud tamen dilatatum, apice mucronatum. Pronoti lobi laterales postice rectanguli. Elytra lanceolata, acuta, parum longa, dense reticulata ac sat dense transverse oblique venosa. Tibiæ intermediæ supra spinis 6 (uniseriatim spinosæ). Cerci crassissimi, valde arcuati, sinistro apice subtus dente armato.

♂. Campus tympanalis in utroque elytro hyalino, membranaceus, parte apicali reticulato ; areola speculo axillari subquadrato.

♂. Long. 34 ; pronot. 10 ; rostr. 6·5 ; elytr. 38 ; femor. post. 18 millim.

Hab. CENTRAL AMERICA.—BRAZIL.

[9. **Copiophora cephalotes,** sp. n. (Tab. XIX. fig. 2.)

♀. *C. capitonis* formis simillima; capite et pronoto iisdem formis quam in illa specie, at rugosioribus. Differt ab illa hisce characteribus:—Verticis processus subtus rugulosus, punctatus; facies tota rugosa, carina utrinque infra oculos valde crenata. Pronotum utrinque rugatum. Elytra latiuscula, brevia, valde elliptica, apice valde rotundata, coriacea, densissime punctato-reticulata, abdomen parum vel haud superantia. Femora rugata, antica et intermedia in utroque margine spinis 5, in margine antico longis. Tibiæ intermediæ supra 6-spinosæ. Femora postica extus spinis longis 10, margine interno inermi; lobi geniculares omnes utrinque valde spinosi. Ovipositor pro genere brevis, rectus, subacutus. Lamina infra-genitalis incisa.

♀. Long. 37; pronot. 10·5; elytr. 27; femor. post. 17·5; ovipos. 26 millim.

Hab. BRAZIL, Rio Janeiro.

This species is the only one known to us which bears two rows of spines on the inferior edges of the anterior and intermediate femora. We have described it here so as to prevent a possible confusion with *C. capito*.]

Obs.—*C. capito* and *C. cephalotes* are of robust build, and by their wide and flattened face they present some analogy with the genus *Lirometopum* (which, however, is destitute of a vertical horn); *C. cephalotes*, moreover, has crenulated carinæ on both sides of the face and short elytra.

10. **Copiophora brevirostris,** Stål.

Copiophora brevirostris, Stål, Öfv. Vet.-Ak. Förh. p. 50 (1873); Recens. Orthopt. 2, p. 105 (1874); Redt. Monogr. der Conoceph. p. 30 (♀), t. 3. fig. 5; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 25 (♀ ♂) (1896).

Hab. PANAMA, Isthmus of Darien.—COLOMBIA, Cartagena, Medellin.

LIROMETOPUM, Scudd.

Lirometopum, Scudder, Proc. Bost. Soc. Nat. Hist. xvii. p. 457 (1875); Redtenbacher, Monogr. der Conoceph. p. 31.

Corpus obesum. Caput ingens, brevissimum, antice totum oblique obtritum, suborbiculare, marginibus lateralibus acutis, crenatis. Vertex margine antico transverse compresso, latissimo, trilobato. Antennæ gracillimæ. Pronotum supra teres, postice parum productum. Elytra coriacea, dense reticulata, ovata, apice attenuata. Prosternum muticum; meso- et metasternum truncata. Mesosternum angulis posticis in spinas productis. Pedes crassi; postici breves. Femora omnia margine antico spinoso. Tibiæ anticæ supra inermes, foraminibus conchatis, per sulcum anticum notatis; hoc basi et apice in punctum impressum terminato. Ovipositor rectus, acutus, parallelus. Lamina infra-genitalis incisa.—Mares ignoti.

1. **Lirometopum coronatum,** Scudd. (Tab. XIX. fig. 3.)

Lirometopum coronatum, Scudd. Proc. Bost. Soc. Nat. Hist. xvii. p. 458, figg. 1, 2; Redt. Monogr. der Conoceph. p. 31, t. 3. fig. 6.

Crassum, viride. Caput latissimum, superne breve. Vertex inter antennas latissimus, breviter productus, transversus, breviter rotundato-bilobatus. Facies planissima, nitida, rugosa, multifarie verruculosa, marginibus lateralibus acutis, arcuatis, per 4–5 tuberculos dentiformes crenatis. Clypeus partim, labrum et mandibulæ anterius nigræ; hæ anterius planæ, nitidæ, extus carinatæ. Capitis latera rugulosa.

Pronotum supra latum, subconvexum, ruguloso-punctatum, postice leviter productum, arcuato-truncatum. Lobi laterales densissime rugati, angulo infero leviter producto, rotundato. Elytra abdomen vix vel parum superantia, ovato-lanceolata, apicem versus attenuata, densissime punctato-reticulata, coriacea; campo marginali multifarie reticulato, areolis punctiformibus, pellucidis vel nigris, venis retis itaque nigro-circumdatis. Venæ transversæ areæ ulnaris ad marginem posticum puncto nigro. Alæ hyalinæ. Femora anteriora margine antico spinis 4; intermedia 5; postica 10–12. Segmentum anale supra medio leviter incisum. Lamina supra-analis trigonalis. Ovipositor rectus, femore postico plusquam sesqui-longior, apice acuto.

♀. Long. 35; lat. capitis 11·5; pronot. 13; elytr. 34, lat. 12; femor. post. 17; ovipos. 25 millim.

♂. Long. 41; pronot. 13·5, lat. 12·5; elytr. 37; femor. post. 20; ovipos. 25 millim.

Hab. NICARAGUA, Greytown; COSTA RICA, Caché (*Rogers*).—COLOMBIA (*Mus. Genavense*).

This insect has a most extraordinary appearance on account of its enormous, flattened head. The elytra are very closely reticulated, so that the small transparent cells are punctiform; but seen by reflected light, at least in the marginal field, the cells appear to be black, the veins forming the wider net of the reticulation looking as if they were margined with small black spots. This last-mentioned character is not apparent in discoloured specimens.

EXOCEPHALA, Serv.

Exocephala, Serville, Hist. Nat. des Ins. Orthopt. p. 507 (1839); Burmeister, Handb. der Ent. ii. p. 723 (1839); Blanchard, Hist. Nat. des Ins. iii. p. 26 (1840); Redtenbacher, Monogr. der Conoceph. p. 31.

Moncheca, Walker, Cat. Derm. Salt. ii. p. 289 (1860).

Vestria, Stål, Recens. Orthopt. 2, pp. 97, 105 (1874).

Marium tympanum in utroque elytro membranaceum.

Synopsis specierum.

a. Verticis rostrum primum articulum antennarum vix superans, obtusum.

b. Ovipositor rectus.—1. *bisulca,* Serv.

bb. Ovipositor curvatus.—[*nigricauda* and *viridis,* Burm. (North Amer.).]

aa. Verticis rostrum primum articulum antennarum superans, apice coarctatum, acuminatum.

b. Verticis rostrum primum articulum antennarum haud duplo superans.—[2. *spinifrons,* sp. n.]

bb. Verticis rostrum primum articulum antennarum duplo superans.—3. *punctata,* Redt.

1. **Exocephala bisulca,** Serv.

Locusta bisulca, Serv. Encycl. Méth. x. p. 342 (1825); Rev. Méth. p. 160.

Exocephala bisulca, Serv. Hist. Nat. des Ins. Orthopt. p. 508; Redt. Monogr. der Conoceph. p. 32, t. 3. fig. 7.

Moncheca pretiosa, Walk. Cat. Derm. Salt. ii. p. 289.

Versicolor. Caput fulvum vel rufescens; facie antrorsum nigra, ore nonnunquam rufo. Verticis rostrum breve, obtusum, ad apicem tuberculo utrinque minuto. Antennæ frequenter nigræ, longe flavido-annulatæ. Pronotum fusco-rufum vel nigrum; lobis lateralibus margine luteo cum vitta metazonæ et cum vitta

angustiore marginis antici confluente, luteis vel virescentibus. Elytra campo laterali infuscato vel purpurescente, venulis transversis flavidis, margine costali et campo anali viridibus vel luteis. Alæ hyalinæ, venis æruginoso-viridibus. Pedes nigri vel ferruginei. Femora anteriora et intermedia in margine antico spinis trigonalibus 6 armata, margine postico mutico; lobis genicularibus rotundatis vel trigonalibus; lobi geniculares postici acuti. Ovipositor rectus, niger, femore paulo longior, apice acuminatus, subtus basi ferrugineus.

♂. Segmentum anale transversum, apice late trigonali deflexum. Cerci basi crassi, apice attenuati, leviter arcuati, minute mucronati. Lamina infra-genitalis brevior quam latior, sinuata, stylis crassis instructa.

Var. In coloribus multifarie variat. Nonnunquam tota flavescens sed semper elytris fuscescentibus, saltem in campo marginali lineolis luteis tessellatis. Tuberculi rostri verticis plus minus explicati vel obliterati.

♀. Long. 33; pronot. 7·5; elytr. 49; femor. post. 19; ovipos. 19·5 millim.

♂. Long. 24; pronot. 6; elytr. 41; femor. post. 15·5 millim.

Hab. GUATEMALA; PANAMA.—VENEZUELA; GUIANA; PERU.

[2. **Exocephala spinifrons,** sp. n.

E. bisulcæ formis simillima. Tota viridis vel rufo-testacea. Verticis rostrum primum articulum antennarum sensim superans, supra utrinque bigranulatum, ante apicem utrinque tuberculatum, apice angustum, subacuminatum, compressum. Antennæ nigræ, remote luteo-annulatæ. Pronotum nitidum, sulcis profunde impressis, margine postico quam in *E. bisulca* paulo magis truncato; metazona transverse late sulcata, anterius vitta transversa pallida; lobi laterales margine infero frequenter subsinuato. Elytra pellucido-virescentia, apice attenuata, campo marginali nonnunquam pallide rufescente; venis costalibus pallidis. Alæ vitreæ, campo marginali leviter virescente. Pedes frequenter castanei. Femora anteriora subtus spinis 6:5, lobo geniculari interno acuto; intermediæ lobis genicularibus acutis. Femora postica subtus utrinque spinis 8–10, lobis genicularibus spiniformibus. Ovipositor rectus, acuminatus, femore longior, niger, valvis superioribus sanguineis basi flavescentibus parte apicali nigra.

Var. Tibiæ nigræ, purpurascentes.

♀. Long. 41; pronot. 7·5; elytr. 55; femor. post. 19; ovipos. 21 millim.

Hab. GUIANA, Cayenne.

This insect may prove to be the female of *E. punctata.*]

3. **Exocephala punctata,** Redt.

Exocephala punctata, Redt. Monogr. der Conoceph. p. 34.

Hab. PANAMA, Bugaba (*Champion*), Chiriqui (*coll. Dohrn*).

ERIOLUS, Boliv.

Eriolus, Bolivar, Mém. Soc. Zool. Fr. i. p. 150 (1888); Redtenbacher, Monogr. der Conoceph. p. 34, t. 3. fig. 8.

Marium tympanum in elytro sinistro coriaceum; in elytro dextro membranaceum.

Synopsis specierum.

1. *Feminæ.*

a. Ovipositor latiusculus, basi supra sinuatus, apice oblique truncatus.

b. Lobi mesosternales antice utrinque spinigeri.—[*spiniger* (♂ ♀) (Cayenne).]

bb. Lobi mesosternales mutici. Verticis rostrum primum articulum antennarum superans.

c. Gracilis. Elytris elongatis. Verticis rostrum acutum. Lobi geniculares postici minute lobati.—1. *mexicanus*, Sss.

cc. Minus gracilis, pedibus minus gracilibus. Verticis rostrum hebetatum. Lobi geniculares postici spiniformes.—2. *consobrinus*, sp. n.

aa. Ovipositor angustior, acutus.

b. Elytra modice angusta, apice rotundata. Ovipositor valde falcatus.—3. *falcatus*, sp. n.

bb. Elytra angustissima, acuta. Ovipositor parum arcuatus, breviusculus.—4. *acutipennis*, sp. n.

2. *Mares*.

a. Pronotum margine postico producto, rotundato.—5. *longipennis*, Redt. (♀ ♂).

aa. Pronotum postice truncatum.

b. Elytra apice rotundata. Verticis rostrum conicum.

c. Lobi geniculares postici lobiformes. Verticis rostrum vix prominulum, subobtusum. Elytra breviora.—6. *brevipennis*, Redt.

cc. Lobi geniculares postici spiniformes. Verticis rostrum prominulum.—2. *consobrinus*.

bb. Elytra acuta. Verticis rostrum apice rotundatum.—4. *acutipennis*.

1. **Eriolus mexicanus**, Sauss. (Tab. XIX. figg. 4, 5.)

Copiophora mexicana, Sauss. Rev. et Mag. Zool. (2) xi. p. 207 (1859); Redt. Monogr. der Conoceph. p. 28, nota.

♀. Viridis, gracilis. Caput lævigatum; facies lævigata, superne leviter rugulosa; mandibulæ apice margine interno et externo brevissime nigris. Verticis rostrum conicum, primum articulum antennarum superans, acutum, subtus carinatum. Pronotum rugulosum, postice parum productum, margine postico subarcuato fere sicut in *E. spinigero*, R., sed paulo minus arcuato. Lobi laterales angulo infero haud producto. Elytra angusta, abdomen valde superantia, apicem versus angustata; campo marginali areolis principalibus magnis, irregularibus impleto. Alæ hyalinæ, elytra haud superantes. Pedes graciles. Femora antica subtus margine interno spinis 4, externo mutico; lobo geniculari interno spiniformi, externo breviore truncato. Femora postica margine exteriore spinis 6 + 5, margine interno apice spinulis 2–3; lobis genicularibus obtusis haud productis. Tibiæ posticæ graciles, femoribus paulo longiores. Ovipositor compressus, a latere basi supra sinuatus, ante medium latissimus, dehinc gradatim attenuatus, apice oblique truncatus, fusco-limbatus, subacutus; margine infero valde arcuato; margine supero vix sinuato; marginibus omnibus integris, haud granosis, excepto in margine apicali truncato granulis 3–4; lateribus subtilissime rugulosis, linea elevato-granulosa nulla vel obsoleta. Lamina infra-genitalis in medio emarginata.

♀. Long. 24, cum elytr. 40; elytr. 31; femor. post. 14; ovipos. 10·5 millim.

Figures:—Fig. 4, the female insect, magnified.—Fig. 4*, ditto, natural size.—Fig. 5, head and pronotum, from above.

Hab. Mexico, Cordova (*Saussure*).

Our unique specimen is now in very bad condition, so that we are unable to give a complete description to supplement the original diagnosis. It may be noticed that the legs are longer and more slender in this species than in any of the other known members of the genus; the process of the vertex is also more acute than usual. Fortunately, we possess a good figure which was made long ago from the type.

2. **Eriolus consobrinus,** sp. n. (Tab. XIX. figg. 6, 7.)

Minor, gracilis, viridis. Verticis rostrum longiusculum, conicum, apice hebetatum, primum articulum antennarum dimidia parte superans, subtus haud acute carinatum. Capitis latera lævigata, lineis rugulosis paucis; facies polita, infra ocellum punctis crassis nonnullis nonnunquam impressa; labrum castaneum; mandibulæ apice et margine interno nigræ. Pronotum valde rugatum, postice breviter productum, truncatum, margine postico vix arcuato; lobi laterales angulo postico ad inferum producto. Meso- et metasternum haud lobata. Elytra abdomen valde superantia, elevato-rugosa; campo marginali elevato-reticulato, venis costalibus 6–7 distinctis; venis transversis in toto elytro flavicantibus. Femora 4 anteriora margine antico spinis 6, postico inermi; lobis genicularibus trigonali-productis. Femora postica utrinque spinosa; lobis genicularibus graciliter spinosis.

♀. Ovipositor compressus, in medio latissimus, tenuiter rugulosus, valvis oblique truncatis, anguste fusco-limbatis; valvæ superiores margine supero subsinuato, haud granulato, disco supra in medium linea granulata notato (nonnunquam deficiente). Lamina infra-genitalis vix sinuata.

♂. Segmentum anale supra planum, utrinque subcarinatum, profunde anguste incisum; lobis apicalibus parallelis, apice obtusis. Cerci teretes, apice furcati, dente supero gracillimo, infero conico, longiore. Lamina infra-genitalis triangulariter incisa.

♀. Long. 19–21; pronot. 5·5; elytr. 28–30; femor. post. 12–13; ovipos. 8–9 millim.

♂. Long. 17; pronot. 5; elytr. 25; femor. post. 11 millim.

FIGURES:—Fig. 6, the head and pronotum from above, magnified.—Fig. 7, the end of the abdomen and the ovipositor of the female insect.

Hab. GUATEMALA, Lanquin in Vera Paz, Capetillo (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

This species is nearly allied to *E. frater*, Redt., of South America; but it seems to differ from that insect in having the process of the vertex reaching distinctly beyond the first joint of the antennæ.

3. **Eriolus falcatus,** sp. n. (Tab. XIX. fig. 8.)

♀. Minor, viridis. Facies polita. Verticis rostrum conicum, apice haud acutum, primum articulum antennarum vix superans, subtus convexum, haud nisi basi inter antennas carinatum, cum fronte contiguum. Labrum castaneum, mandibulæ intus nigræ. Pronotum subtiliter sparse punctatum, postice parum productum, arcuato-truncatum; lobi laterales rugulosi, margine infero subsinuato, angulo postico subproducto. Elytra angusta, ovipositorem superantia sicut in *E. consobrino* reticulata. Femora antica subtus margine antico 4-, intermedia 5-spinosa; lobis genicularibus acutis. Femora postica extus spinosa, intus tenuissime spinulosa, lobis genicularibus spinosis. Ovipositor angustus, valde arcuato-falcatus, lævigatus, parallelus, basi haud sinuatus, apice longiuscule acuminatus.

♀. Long. 12; pronot. 5·5; elytr. 25; femor. post. 11; ovipos. 6·5 millim.

FIGURE:—Fig. 8, the end of the abdomen and ovipositor, magnified.

Hab. GUATEMALA, Lanquin in Vera Paz (*Champion*).

This insect somewhat resembles *E. caraibeus*, Bol., from Cuba, but it differs from that species in its slender, strongly arcuated, shorter ovipositor, which is not dilated in the middle.

4. **Eriolus acutipennis,** sp. n. (Tab. XIX. figg. 9, 10.)

Minutus, gracilis, viridis. Caput lævigatum. Verticis rostrum subparallelum, primum articulum antennarum leviter superans, apice rotundatum, subtus basi sinuatum, apice nodosum. Articulus primus antennarum brevis, apice oblique truncatus, rotundatus, angulo interno fusco, rotundato, dente nullo. Pronotum

lævigatum, postice punctatum, arcuato-truncatum; lobis lateralibus leviter rugulosis, margine infero sinuato, angulo postico fere rectangulo, hebetato, haud producto. Elytra angustissima, a basi ad apicem attenuata, apice hebetato-acuminata (dense reticulata), campo marginali venis costalibus 6:7. Pedes graciles. Femora anteriora subtus inermia, lobo geniculari externo subacuto; intermedia in margine antico spinis 3, lobis geniculatibus acutis. Femora postica extus spinulosa, intus spinulis 3–4, lobis geniculatibus graciliter spinosis. Segmentum anale incisum, trigonali-bilobatum. Ovipositor brevis, subarcuatus, nec dilatatus nec basi sinuatus, gradatim attenuatus, acutus, lævigatus, margine infero toto arcuato, supero parum arcuato, dimidia parte apicali recta. Lamina infra-genitalis truncata.

♀. Long. 18; pronot. 5; elytr. 27, lat. 4·5; femor. post. 13·5; ovipos. 5·5 millim.

FIGURES:—Fig. 9, the end of the female abdomen, with the ovipositor.—Fig. 10, the right elytron, magnified.

Hab. PANAMA, Bugaba (*Champion*).

5. **Eriolus longipennis,** Redt.

Eriolus longipennis, Redt. Monogr. der Conoceph. p. 36.

Elytra maculis rufis conspersis notata. Femora postica extus multispinosa, intus spinis 6 invicem remotis.

♂. Long. 25; pronot. 10; elytr. 35; femor. post. 15 millim.

Hab. COSTA RICA (*coll. Brunner*).

Unknown to us.

6. **Eriolus brevipennis,** Redt.

Eriolus brevipennis, Redt. Monogr. der Conoceph. p. 37.

Hab. GUATEMALA (*coll. Brunner*).

Unknown to us.

[BASILEUS *, gen. nov.

Corpus modice crassum. Caput sat magnum; oculi globosi. Vertex inter antennas primo articulo antennarum fere duplo latius, illum haud superans, transverse truncatum, trituberculatum, cum fastigio frontis confusum, ab illo per sulcum subtilissimum sejunctum. Antennæ longæ, gracilimæ. Pronotum sulcis 2 distinctis impressum, postice parum productum, margine paulum arcuato; lobi laterales margine infero obliquo, subsinuato, angulo postico leviter producto. Etytra elongata, semimembranacea, apice rotundata, campo marginali densissime reticulata, parte ulnari late reticulata. Alæ longæ, apice angulatæ. Femora omnia subtus utrinque spinulosa; lobis genicularibus acutis, posticis spinosis. Tibiæ spinis gracilibus armatæ. Prosternum margine antico utrinque spina brevi armatum. Mesosterni lobi triangulares, deflexi, apice spinosi. Metasternum trapezinum. Segmentum anale ♀ truncatum. Ovipositor gracilis, arcuatus, modice longus, valvis inferis brevioribus.

This genus approaches *Liostethus*, Redt., differing from it in the trilobate vertex, the non-coriaceous elytra, and the slender, arcuated ovipositor, this latter being straight and dilated as in *Liostethus*. The form of the head, with its trilobate vertex, is suggestive of that of the genus *Lirometopum*, but it is much smaller. In *Lirometopum*, too, the prosternum is unarmed.

1. **Basileus diadematus,** sp. n. (Tab. XIX. figg. 11, 12.)

Viridis; corpore frequenter fulvo vel fuscescente. Caput et pronotum polita. Verticis processus transverse quadratus, margine antico bisinuato, trituberculato, tuberculis lateralibus rotundatis, medio trigonali.

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* *βασιλεὺς*, rex.—Videtur scilicet ejus caput quasi coronatum.

Os et facies inferius nigra. Pronoti lobi laterales et metazona rugulosi. Elytra abdomen longe superantia viridi-thalassina. Alæ hyalinæ. Femora antica subtus spinis 5 : 3, intermedia 5 : 6 ; postica intus spinulis rarioribus, minutis. Cerci longiusculi, acuti. Ovipositor femoris longitudine, arcuatus, niger (vel basi pallidus).

♀. Long. 33–38 ; pronot. 8·5–9 ; elytr. 53–54 ; femor. post. 17·5 ; ovipos. 14–15·5 millim.

Figures :—Fig. 11, the head and pronotum from above, magnified.—Fig. 12, the end of the female abdomen, with the ovipositor.

Hab. Guiana, Cayenne (*Portal*).]

PYRGOCORYPHA, Stål.

Pyrgocorypha, Stål, Öfv. Vet.-Ak. Förhandl. 4, p. 50 (1873) ; Recens. Orthopt. 2, pp. 98, 107 (1874) ; Redtenbacher, Monogr. der Conoceph. p. 57.

Marium tympana in elytro sinistro coriaceo ; in elytro dextro speculo membranaceo.

Of this genus six species only are known to us, all very distinct, of which two are Asiatic, and the others Central-American, one of them, *P. uncinata*, extending to the southern portion of the United States.

Synopsis specierum.

a. Verticis rostrum longissimum, acutum, a latere visum rectum, subtus nigrum. Mandibulæ luteæ.

b. Major. Capitis facies nigra, crasse punctata. Pronoti canthi rotundati. Vena ulnaris elytri 4 : 5 ramosa. Lobi sternales nigri. Femora postica crassiuscule spinosa. Lobi apicales segmenti analis prominuli. Ovipositor mediocris, apice hebetatus.—1. *sallei,* Sss.

bb. Minor. Capitis facies viridis, profunde punctata. Pronoti canthi distincti. Vena ulnaris elytri biramosa. Lobi sternales concolores. Femora postica minute spinosa.—2. *rogersi,* sp. n.

aa. Verticis rostrum brevius, variabile, hamatum vel hebetatum. Femora postica crassiuscule spinosa. Mandibulæ nigræ. Ovipositor longiusculus, acutus.

b. Verticis rostrum apice acute hamatum.

c. Verticis rostrum longiusculum, a supero acutum ; facies obsolete punctata.—3. *uncinata,* Harr.

cc. Verticis rostrum breviusculum, a supero trigonale ; facies crasse punctata.—4. *hamata,* Scudd.

bb. Verticis rostrum breviusculum, apice hebetatum.—5. *inermis,* sp. n.

1. **Pyrgocorypha sallei,** Sauss. (Tab. XIX. figg. 15, 16.)

Conocephalus sallei, Sauss. Rev. et Mag. Zool. (2) xi. p. 207 (1859).

Pyrgocorypha sallei, Redt. Monogr. der Conoceph. p. 58.

Figures :—Fig. 15, the female insect, natural size.—Fig. 16, the head from in front.

Hab. Mexico (*coll. Brunner*), Cordova (*Höge*), Vera Cruz (*Saussure*).

2. **Pyrgocorypha rogersi,** sp. n. (Tab. XIX. figg. 13, 14.)

♀. Viridis. Verticis rostrum quam in *P. sallei* angustius ac longius, acutissimum, superne deplanatum rugosum, apice brevissime leviter decurvum, subtus nigrum, marginibus subcarinatis, basi luteis. Facies viridis, obsolete crasse punctata; mandibulis flavidis. Pronotum antice supra truncatum, totum crasse punctatum, dorso planato; canthis utrinque leviter explicatis, margine postico utrinque minus rotundato quam in *P. sallei*. Elytra apice valde attenuata; ejus vena media paulo ante medium oriens, apice biramosa, ad basin venæ ulnari contigua; vena ulnaris triramosa. Alæ apice obtusiusculæ, quam in *P. uncinato* minus acutæ; vena media triramosa. Femora antica in margine antico apice 2-spinosa; intermedia 3:4-, postica 3:8-spinosa, spinis brevibus. Pectus haud nigrum. Lobi metasternales trigonales. Segmentum anale apice trigonali-depressum, basi sulcatum, lobo depresso breviter rotundato; lobi trigonales subacuti. Cerci apice leviter incurvi. Ovipositor brevis, vix arcuatus, subacutus, ultra medium subdilatatus.

♀. Long. 28; pronot. 7·5; rostr. 4; elytr. 29; femor. post. 14·5; ovipos. 9 millim.

Figures:—Fig. 13, the female insect, magnified.—Fig. 14, the end of the abdomen, with the ovipositor.

Hab. Costa Rica, Caché (*Rogers*).

3. **Pyrgocorypha uncinata,** Harr.

Conocephalus uncinatus, Harris, Treat. on some Ins. of New Engl. p. 132 (1842); Treat. on some Ins. inj. to Veget. p. 164 (1862); Scudd. Bost. Journ. Nat. Hist. vii. p. 450 (1862).
Pyrgocorypha uncinata, Redt. Monogr. der Conoceph. p. 59.

Hab. North America, N. Carolina, Louisiana, Alabama, Texas.—Mexico, Jalapa (*Mus. Hamb.*), Orizaba, Yucatan (*Saussure*); Guatemala.—Antilles, Cuba.

The specimens before us from Cuba, as well as those from Louisiana and Carolina, are of larger size than those from Central America, as shown by the following measurements:—

Central-American form:

♀. Long. 32; pronot. 9·5; elytr. 46; femor. post. 20; ovipos. 21 millim.
♂. Long. 30; pronot. 10·5; elytr. 42; femor. post. 19·5 millim.

Cuban form:

♀. Long. 33; pronot. 10·5; elytr. 47; femor. post. 21; ovipos. 22 millim.
♂. Long. 36; pronot. 12; elytr. 47; femor. post. 22 millim.

4. **Pyrgocorypha hamata,** Scudd.

Conocephalus hamatus, Scudd. Proc. Bost. Soc. Nat. Hist. xx. p. 87 (1879).
Pyrgocorypha hamata, Redt. Monogr. der Conoceph. p. 59, t. 3. fig. 21.

Hab. Mexico, Cuernavaca in Morelos (*H. H. Smith*), Michoacan; Guatemala*; Salvador.

5. **Pyrgocorypha inermis,** sp. n. (Tab. XIX. fig. 17.)

Viridis, graciusculus. Verticis rostrum breviusculum, mitriforme, marginibus lateralibus arcuatis, apice hebetato, uncino nullo, subtus haud acute carinatum. Facies remote punctata, nitida. Labrum et

* Mr. Scudder gives Guatemala (*Van Patten*): this is probably a mistake for Costa Rica.

mandibulæ nigræ. Pronotum dense et fortiter punctatum, canthis obsolete perspicuis, postice distinctioribus; lobis lateralibus rotundato-angulatis. Elytra haud longissima, femora tamen valde superantia, sparse fusco-punctulata, elevato-reticulata. Campus tympanalis sinister dense reticulatus, speculo tantum extus membranaceo. Pedes breves. Femora antica anterius spinis 3; intermedia 5; postica utrinque spinosa. Lobi sternales acuti. Segmentum anale utrinque obtuse dentatum, apice deflexum. Cerci teretes, acutangulatim incurvi, apice mucronati. Lamina infra-genitalis apice leviter sinuata.

♂. Long. 39; pronot. 11; elytr. 41; femor. post. 17·5 millim.

FIGURE:—Fig. 17, head and pronotum from above, magnified.

Hab. COSTA RICA, San José (*Biolley*).

CAULOPSIS, Redt.

Caulopsis, Redtenbacher, Monogr. der Conoceph. p. 62 (1891).

Tympanum marium in elytro sinistro coriaceo; in elytro dextro speculo membranaceo.

1. **Caulopsis cuspidata,** Scudd.

Conocephalus cuspidatus, Scudd. Proc. Bost. Soc. Nat. Hist. xx. p. 88 (1879); Boliv. Mém. Soc. Zool. Fr. i. p. 149 (1888).

Caulopsis cuspidata, Redt. Monogr. der Conoceph. p. 63.

Hab. MEXICO, Durango or Sinaloa (*Forrer*).—GUIANA; VENEZUELA; ANTILLES, Cuba.

Not previously known from Mexico, and its occurrence on the western coast was not to be expected.

CONOCEPHALUS, Thunb.

Conocephalus, Thunberg, Mém. Acad. St. Pétersb. v. p. 218 (1815); Serville, Hist. Nat. des Ins. Orthopt. p. 514 (1839); Burmeister, Handb. der Ent. ii. p. 704 (1839); L. H. Fischer, Orthopt. Europ. p. 245 (1853); Stål, Recens. Orthopt. 2, pp. 99, 108 (1874); Redtenbacher, Monogr. der Conoceph. p. 64; Fieber; Rambur; Blanchard; Bolivar; Scudder; Brunner v. Wattenwyl.

Tympanum marium in elytro sinistro coriaceo; in elytro dextro speculo membranaceo instructo.

Synopsis specierum *, secundum Redtenbacher.

a. Verticis rostrum a fastigio frontis remotum, breve, apice haud mucronatum, latum, obtusum, subtus basi dentatum vel tuberculatum.

b. Femora postica subtus nigro-punctata vel femora 4 antica subtus infuscata.

c. Verticis rostrum subtus infuscatum vel nigro-fasciatum.

d. Femora subtus haud infuscata.

e. Verticis rostrum breve sed distincte conicum, a supero antice utrinque oblique truncatum.

f. Femora intermedia subtus nigro-punctata. Verticis rostrum vix longius quam latius.

g. Statura major. Ovipositor longior.—1. *guttatus,* Serv.

gg. Statura minor. Ovipositor brevis.—[2. *pichinchæ,* Bol.]

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* Including a few species that are likely to be confounded with those of Central America.

ff. Femora intermedia subtus haud nigro-punctata:

g. subtus spinulis 3–4; femora antica spinulis 2. Verticis rostrum subtus apice vel totum nigrum.—[3. *irroratus,* Burm.]

gg. subtus spinula unica vel nulla; femora antica inermia. Verticis rostrum subtus apice vitta nigra.—4. *muticus,* Redt.

ee. Verticis rostrum breve, rotundatum, apice haud utrinque oblique truncatum.

f. Elytra margine antico concolore.

g. Verticis rostrum æque longum ac latum, subtus concolor vel lineola transversa nigra. Femora omnia subtus immaculata, anteriora 4 subtus spinulis 2–3.—5. *mexicanus,* Sss.

gg. Verticis rostrum quam latius paulo longius,

h. subtus totum nigrum. Femora omnia subtus nigro-maculata ac spinosa.—6. *tristani,* sp. n.

hh. subtus vitta transversa nigra. Femora omnia subtus immaculata ac spinosa.—7. *aztecus,* sp. n.

ff. Elytra margine antico fusco-nigro.—8. *obscurellus,* Redt.

dd. Femora subtus infuscata vel nigra.

e. Femora omnia subtus infuscata. Verticis rostrum latius quam longius, subtus fascia transversa nigra.—9. *fuscostriatus,* Redt.

ee. Femora 4 antica subtus fusca. Verticis rostrum longius quam latius, distincte conicum, subtus fuscum.—10. *frater,* Redt.

cc. Verticis rostrum et femora intermedia subtus concoloria, immaculata. Verticis rostrum breve, rotundatum, haud globosum.

d. Pronoti lobi laterales angulo antico rotundato. Ovipositor femoris longitudine.—11. *macropterus,* Redt.

dd. Pronoti lobi laterales angulo subdistincto. Ovipositor femore brevior.—12. *necessarius,* Redt.

bb. Femora postica subtus concoloria, haud fusco-punctata.

c. Verticis rostrum distincte conicum, oculo sesqui-longius, subtus immaculatus. Elytra femoribus posticis duplo longiora.

d. Statura minor. Femora postica intus spinis 2–5.—13. *testaceus,* Redt.

dd. Statura major. Femora postica intus spinis compluribus.—[14. *crepitans,* Scudd.]

cc. Verticis rostrum breve, rotundatum. Tibiæ posticæ elytra distincte superantes.

d. Verticis rostrum subtus vitta transversa nigra.—[15. *dissimilis,* Scudd.]

dd. Verticis rostrum subtus concolor vel linea apicali transversa angustissima, nigra.

e. Femora 4 antica spinulis 1–3 instructa.—16. *nietoi,* Sss.

ee. Femora 4 antica inermia. Ovipositor longissimus, angustus.—17. *gladiator,* Redt.

aa. Verticis rostrum cum fastigio frontis contiguum, breve, rotundatum, subtus concolor.

b. Verticis rostrum latum, rotundatum, a supero visum transversum. Tibiæ concolores. Ovipositor femoribus æquilongus.—18. *laticeps,* Redt.

bb. Verticis rostrum fere vel distincte longius quam latius. Ovipositor femoribus brevior. Elytra elongata.

c. Femora postica subtus fusco-punctata.—19. *prasinus,* Redt.

cc. Femora postica subtus haud fusco-punctata.—20. *surinamensis,* Redt.

1. **Conocephalus guttatus,** Serv.

Conocephalus guttatus, Serv. Hist. Nat. des Ins. Orthopt. p. 518 (1839); Guérin, in Ramon de la Sagra's Hist. fis. polit. y nat. de Cuba, Ins. p. 147 (1846); Boliv. Mém. Soc. Zool. Fr. i. p. 149 (1888); Redt. Monogr. der Conoceph. p. 78, t. 3. fig. 33; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 26 (1896).

? *Gryllus obtusus,* Stoll, Représ. des Spectr. &c. t. 17 *b*. fig. 64.

Hab. Mexico; Costa Rica; Panama, Bugaba (*Champion*), Chiriqui (*coll. Brunner*), Isthmus of Darien.—Colombia; Venezuela; Antilles, Cuba, Jamaica, St. Vincent.

[### 2. **Conocephalus pichinchæ,** Boliv.

Conocephalus pichinchæ, Boliv. An. Soc. Esp. Hist. Nat. x. p. 498 (1881); Artróp. del Viaje al Pacífico, p. 100 (1884); Redt. Monogr. der Conoceph. p. 78.

Hab. Ecuador, Pichincha; Antilles, Cuba.]

[### 3. **Conocephalus irroratus,** Burm. (Tab. XIX. figg. 18–20.)

? *Locusta tuberculata,* De Geer, Mém. des Ins. iii. p. 444, t. 38. fig. 1 (1773).

Conocephalus tuberculatus, Stål, Recens. Orthopt. 2, p. 110 (1874).

Conocephalus irroratus, Burm. Handb. der Ent. ii. p. 725 (1839); Boliv. Artróp. del Viaje al Pacífico, p. 101 (1884); Redt. Monogr. der Conoceph. p. 80.

Conocephalus dentifrons, Sauss. Rev. et Mag. Zool. (2) xi. p. 207 (1859).

Verticis rostrum primum articulum antennarum dimidia parte apicali superans, ultra articulum attenuatum, marginibus lateralibus oblique convergentibus, apice rotundato, subtus apice nigrum ejusque carina nigra; tuberculo basali obtuso, a fastigio frontis distincte sejuncto. Femora postica subtus nigro-punctata.

Variat. Verticis rostro toto nigro.

♂. Campus tympanalis sinister coriaceus; dexter semimembranaceus, area externa membranacea.

♀. Long. . . . .?; pronot. 6; femor. post. 22; elytr. 39 millim. (Typus Saussurei *C. dentifrontis,* specimen minutum.)

♀. Long. 36; pronot. 8·2; elytr. 47; femor. post. 36; ovipos. 29 millim.

Figures:—Fig. 18, the head from above, magnified.—Fig. 19, ditto, from in front.—Fig. 20, ditto, in profile.

Hab. Ecuador; Brazil.

Redescribed here to fix the type of *C. dentrifrons,* Sauss.]

4. **Conocephalus muticus,** Redt.

Conocephalus muticus, Redt. Monogr. der Conoceph. p. 79; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 26 (♀ ♂) (1896).

Hab. Panama, Punta de Sabana, Isthmus of Darien.—Antilles, Cuba, St. Vincent.

5. **Conocephalus mexicanus,** Sauss. (Tab. XIX. fig. 21.)

Conocephalus mexicanus, Sauss. Rev. et Mag. Zool. (2) xi. p. 208 (1859); Redt. Monogr. der Conoceph. p. 81; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 26 (1896).

Viridis. Verticis rostrum breve, latius quam longius, antice late rotundatum, apice luteo-limbatum ac

nonnunquam subtus linea transversali subapicali nigra; basi distincte dentatum et a fastigio frontis remotum. Pronotum dense punctatum; lobis lateralibus inferius angulatis, angulo antico et postico rotundato, sinu humerali distincte explicato. Elytra elongata, vena mediastina divergente, subtili, ramosa. Femora antica subtus spinulis 0–2, intermedia 2–3, postica utrinque spinis compluribus basi fusco-punctatis armata.

Var. Elytra sparse nigro-punctata.—[British Honduras.]

♀. Long. 35; pronot. 9; elytr. 50; femor. post. 26; ovipos. 27 millim.

♂. Long. 30; pronot. 9; elytr. 43; femor. post. 24 millim.

Figure:—Fig. 21, the head and pronotum, magnified.

Hab. North America, Georgia, Carolina, Texas (*Mus. Genav.*).—Mexico, Cuernavaca (*coll. Brunner*), Guadalajara in Jalisco, Orizaba (*Schumann*), Teapa in Tabasco (*H. H. Smith*), Temax in N. Yucatan (*Gaumer*); British Honduras, Belize (*Blancaneaux*); Guatemala; Nicaragua, Chontales (*Janson*); Costa Rica, Caché (*Rogers*); Panama, Punta de Sabana, Isthmus of Darien.—Venezuela; Guiana; Brazil; Antilles, Cuba, Haiti.

6. **Conocephalus tristani,** sp. n. (Tab. XIX. fig. 22.)

Majusculus, fulvo-testaceus, griseus vel brunescens (vel virescens). Antennæ concolores. Verticis rostrum primo articulo antennarum duplo latius ac fere sesqui-longius, parallelum late rotundatum, subtus nigrum, tuberculatum, a fronte valde sejunctum, superne vitta marginali lutea, supra rugulosum. Caput lævigatum, genis infra oculos punctulatis ac linea obliqua postoculari lutea. Pronotum rugosum, supra rugulosopunctatum, margine postico truncato, vix arcuato; lobis lateralibus elevatis infra angulatis. Elytra longa, frequenter maculis nigris remotis rarioribus conspersa, vena mediastina distincta, divergens. Femora omnia subtus ad spinas nigro-maculata; anteriora subtus plus minus nigrescentia, subtus spinis 3 in margine anteriore notata; posteriora biseriatim spinosa, spinis omnibus luteis. Ovipositor rectus, femore sublongior.

♀. Long. 38; pronot. 9; elytr. 51; femor. post. 29; ovipos. 32 millim.

Figure:—Fig. 22, the head and pronotum, magnified.

Hab. Costa Rica, Tucurrique (*Tristan*).

Near *C. infuscatus*, Scudd., but larger, with the process of the vertex shorter and blunter, the lateral lobes of the pronotum higher and more angular, and the femora not distinctly black beneath, but maculated and more spined than in *C. infuscatus*. It has only one or two spines on the anterior femora. This last-mentioned character also distinguishes the present species from *C. fuscomarginatus* and *C. maculosus*, Redt.

7. **Conocephalus aztecus,** sp. n.

Viridis. Verticis rostrum quam latum vix longius, oculis longior, parallelum, apice obtusum, rotundatum, haud conicum, luteo marginatum, subtus conico-dentatum, carinatum, antice nigro-limbatum. Frons nitida, obsolete punctata. Os rufum, antennæ rufescentes. Pronotum rugulato-punctatum; lobi laterales infra rotundato-angulati, postice rotundati. Elytra femora postica valde superantia, hic illic frequenter punctis nigris minutis notata. Femora anteriora subtus spinis 2, postica subtus utrinque spinis 8–9; omnibus apice nigris ac ad basin macula nigra. Tibiæ anticæ et intermediæ subtus utrinque maculis nigris ad spinas positis, atque utrinque ad basin supra macula nigra (saltem in tibiis intermediis) ornatæ. Ovipositor longissimus, rectus, quam femora postica paulo longior.

♂. Minor. Tibiis anticis nonnunquam subtus immaculatis.
Var. Elytra nigro punctulato.—[Costa Rica.]
♀. Long. 30–36; pronot. 9; proc. vertic. 2; elytr. 51–57; femor. post. 31; ovipos. 31–33 millim.
♂. Long. 27; pronot. 8; elytr. 40; vertic. 1·3; femor. post. 23 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*); Costa Rica (*Rogers*), Rio General, Pacific coast [var. minor].

This species is very like *C. pichinchæ*, Boliv., in colour, but it is much larger, and has the process of the vertex twice as long as in that insect, and not at all conic, and the elytra reaching much further beyond the hind femora. It differs from *C. guttatus*, Serv., in its longer ovipositor and shorter elytra; and from *C. mexicanus* in having the four anterior femora maculated with black. *C. aztecus* should be placed near *C. maxillosus* (Fabr.), from which it may be distinguished by the shorter and broader process of the vertex, not attenuated at the tip, and by the spotted femora.

8. **Conocephalus obscurellus,** Redt.

? *Conocephalus hebes,* Scudd. Proc. Bost. Soc. Nat. Hist. xx. p. 92 (1879).
Conocephalus obscurellus, Redt. Monogr. der Conoceph. p. 83 (1891).

Hab. North America, New Orleans.—Mexico, Cuernavaca (*coll. Brunner*), San Mateo del Mar, Tehuantepec (*Scudder*); Guatemala; Nicaragua (*coll. Brunner*); Costa Rica (*Biolley*).—Venezuela; Antilles, Cuba, St. Thomas.

This species is fulvous or testaceous in colour, but the markings are variable. The elytra are frequently dotted with black, and sometimes have the anterior margin brown. The pronotum generally has a brown marginal stripe, which is continued on to the principal vein of the elytra.

9. **Conocephalus fuscostriatus,** Redt.

Conocephalus fusco-striatus, Redt. Monogr. der Conoceph. p. 85.

Hab. North America, Georgia, Missouri, Carolina, Texas.—? Mexico.—Ecuador, Quito; Antilles, Cuba, Haiti.

10. **Conocephalus frater,** Redt.

Conocephalus frater, Redt. Monogr. der Conoceph. p. 85 (♂ ♀); Griffini, Bollet. dei Mus. di Zool. di Torino, xi. no. 232, p. 26.

Hab. Panama, Punta de Sabana, Isthmus of Darien.—Trinidad; Amazons; Brazil; Antilles, Cuba, St. Vincent.

11. **Conocephalus macropterus,** Redt.

Conocephalus macropterus, Redt. Monogr. der Conoceph. p. 88.

Hab. Mexico, Durango or Sinaloa (*Forrer*), Cordova (*Mus. Genavense*), Teapa in Tabasco (*H. H. Smith*), Temax in N. Yucatan (*Gaumer*); Honduras, Ruatan I.

(*Gaumer*); Costa Rica.—Brazil; Peru; Argentina; Antilles, Cuba, Martinique, St. Vincent.

12. **Conocephalus necessarius,** Redt.

Conocephalus necessarius, Redt. Monogr. der Conoceph. p. 88.

Hab. Mexico (*coll. Brunner*).

13. **Conocephalus testaceus,** Redt.

Conocephalus testaceus, Redt. Monogr. der Conoceph. p. 89.

Var. Viridis, quam specimina Americæ meridionalis minor; elytris haud nigro-punctatis.
Long. 34; elytr. 48; femor. post. 24; ovipos. 28 millim.

Hab. Mexico, Jalisco (*Schumann*).—Brazil, Theresopolis.

[14. **Conocephalus crepitans,** Scudd.

Conocephalus crepitans, Scudd. Bost. Journ. Nat. Hist. vii. p. 450 (1862); L. Bruner, Orthopt. of Kansas (Bull. Washb. Coll. i.), p. 128; Redt. Monogr. der Conoceph. p. 90.

Hab. North America, Nebraska, Missouri, Kansas, Texas.]

[15. **Conocephalus dissimilis,** Serv.

? *Locusta triops,* Linn. Syst. Nat. 10th ed. i. p. 430 (1758); Mus. Lud. Ulr. p. 131 (1764); Fabr. Ent. Syst. ii. p. 40 (1793); Stål, Recens. Orthopt. 2, p. 110 (1874).

Conocephalus dissimilis, Serv. Hist. Nat. des Ins. Orthopt. p. 518 (1839); Harris, Treatise on some Ins. inj. to Veget. p. 164 (1862); Thomas, Trans. Illinois St. Agr. Soc. v. p. 446; Redt. Monogr. der Conoceph. p. 91.

Hab. North America, Southern States.]

16. **Conocephalus nietoi,** Sauss. (Tab. XIX. figg. 23, 24.)

Conocephalus nieti, Sauss. Rev. et Mag. Zool. (2) xi. p. 208 (1859).

Conocephalus nietoi, Boliv. Mém. Soc. Zool. Fr. i. p. 150 (1888); Redt. Monogr. der Conoceph. p. 91.

Viridis. Verticis rostrum breve, æque longum ac latum, rotundatum, subtus nonnunquam linea nigra ornatum. Pronotum nonnunquam utrinque vitta obsoleta flavida; lobis lateralibus rotundatis, margine infero subrotundato. Elytra longissima, vena mediastina obsoleta. Femora antica subtus spinulis 1–2; intermedia 2–3; postica utrinque spinis compluribus fuscis basi haud fusco-punctatis, armata. Ovipositor rectus, angustus, femore æquilongus.

♀. Long. 32; pronot. 8·5; elytr. 50; femor. post. 25; ovipos. 24 millim.

♂. Long. 34; pronot. 10; elytr. 48; femor. post. 25 millim.

Hab. North America, Texas, New Orleans.—Mexico, Cuernavaca (*coll. Brunner*); Guatemala (*coll. Dohrn*).—Guiana, Surinam; Antilles, Cuba, San Domingo, Jamaica.

17. **Conocephalus gladiator,** Redt.

Conocephalus gladiator, Redt. Monogr. der Conoceph. p. 92.

Hab. Mexico (*Mus. Genavense*).

18. **Conocephalus laticeps,** Redt. (Tab. XIX. fig. 25.)

Conocephalus laticeps, Redt. Monogr. der Conoceph. p. 107, t. 3. fig. 45.

Var. Fulvo-virescens, vitta capitis et pronoti fusca ; campus dorsalis elytrorum ad venam analem infuscatus.

♀. Long. 40 ; pronot. 8 ; elytr. 47 ; femor. post. 20 ; ovipos. 20 millim.

Figure.—Fig. 25, the head from above, magnified.

Hab. Costa Rica, Bebedero (Prov. de Guanacaste) (*Underwood*). — Colombia, Bogota.

This species is distinguishable amongst its allies by the broad process of the vertex being bluntly rounded, somewhat constricted at the base.

19. **Conocephalus prasinus,** Redt.

Conocephalus prasinus, Redt. Monogr. der Conoceph. p. 109.

Hab. Mexico (*Mus. Hamb.*).

20. **Conocephalus surinamensis,** Redt.

Conocephalus surinamensis, Redt. Monogr. der Conoceph. p. 109 ; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 27.

Hab. Panama, Colon, Punta de Sabana, Isthmus of Darien.—Guiana, Surinam ; Antilles, St. Vincent.

BUCRATES, Burm.

Bucrates, Burmeister, Handb. der Ent. ii. p. 708 (1839) ; Stål, Recens. Orthopt. 2, pp. 99, 108 (1874) ; Redtenbacher, Monogr. der Conoceph. p. 115.

1. **Bucrates capitatus,** de Geer.

Locusta capitata, de Geer, Mém. des Ins. iii. t. 40. fig. 1 (1773).

Bucrates capitatus, Burm. Handb. der Ent. ii. p. 709 (1839) ; Redt. Monogr. der Conoceph. p. 115, t. 3. fig. 48 ; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 27 (♂) (1896).

Hab. Guatemala, Vera Paz * (*Mus. Hamb.*) ; Panama, Tintin and Punta de Sabana, Isthmus of Darien.—Brazil, Bahia.

EPPIA, Stål.

Eppia, Stål, Observ. Orthopt. p. 42 (Bihang till K. Svenska Vet.-Akad. Handl. iii.) (1875) ; Redtenbacher, Monogr. der Conoceph. p. 133.

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* Incorrectly given as " Vera Cruz, Guatemala," by Redtenbacher.

1. **Eppia truncatipennis,** Stål.

Eppia truncatipennis, Stål, Observ. Orthopt. p. 42; Redt. Monogr. der Conoceph. p. 134, t. 4. fig. 61.

Hab. GUATEMALA, Retalhuleu (*coll. Brunner*); PANAMA, Chiriqui.

AGRŒCIA, Serv.

Agrœcia, Serville, Rev. Méth. p. 152 (1831); Hist. Nat. des Ins. Orthopt. p. 525 (1839); Burmeister, Handb. der Ent. ii. p. 707 (1839); Stål, Recens. Orthopt. 2, pp. 101, 115 (1874); Blanchard, Hist. Nat. des Ins. iii. p. 25 (1840); Redtenbacher, Monogr. der Conoceph. p. 137.

[1. **Agrœcia vittata,** Redt.

Agrœcia vittata, Redt. Monogr. der Conoceph. p. 140 (larva).

Hab. COLOMBIA.]

2. **Agrœcia festæ,** Griff.

Agrœcia festæ, Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 28 (1896).

Albido-flavescens, linea lutea utrinque a verticis rostro in pronoto et elytrorum margine suturali perducta signata. Antennæ albidæ. Frons nitida, macula et lineolis inferius concoloribus, signata. Verticis rostrum subconicum, compressum, quam articulus primus antennarum longius, eoque æquilatum, apice obtuse rotundatum, in medio utrinque ocello albido notatum. Pronotum sat nitidum, quamvis rugulosum, immaculatum, margine antico truncato, in medio subsinuato, margine postico subtruncato, subrotundato; lobis lateralibus altioribus quam latioribus. Elytra pallida, albo-flavescentia, femora postica superantia, sat angusta, apice rotundata; venis principalibus pallidis; campus tympanalis in utroque elytro et in utroque sexu hyalinus. Alæ elytris æquilongæ, albido-hyalinæ. Femora antica subtus 0–2-spinulosa; intermedia 3–4-spinosa; postica extus 8-, intus apice 1–2-spinulosa. Lobi geniculares omnes spinosi.

♀. Ovipositor incurvus, apice acuminatus, ibique obscurior. Lamina infra-genitalis parva, subrotundata, sulcata.—♂ genitalia?

♀. Long. 20; pronot. 4·5; elytr. 24; femor. post. 11·5; ovipos. 9 millim.

♂. Long. 16; pronot. 4·5; elytr. 22·5 millim.

Hab. PANAMA, Forest of the Rio Lara, Isthmus of Darien.

Allied to the Brazilian *A. maculata,* Redt.

Group **XIPHIDIITES.**

Xiphidiini, Redtenbacher, Monogr. der Conocephaliden, p. 178.

XIPHIDIUM, Serv.

Xiphidium, Serville, Rev. Méth. p. 159 (1831); Hist. Nat. des Ins. Orthopt. p. 505 (1839); Brullé, Hist. Nat. des Ins. ix. p. 146 (1835); Burmeister, Handb. der Ent. ii. p. 707 (1839); Blanchard, Hist. Nat. des Ins. iii. p. 25 (1840); L. H. Fischer, Orthopt. Europ. p. 146 (1853); Stål, Recens. Orthopt. 2, pp. 100, 111 (1874); Brunner v. W. Prodr. der Europ. Orthopt. p. 300 (1882); Redtenbacher, Monogr. der Conoceph. p. 179 (1891).

Orchelimum, Serville, Hist. Nat. des Ins. Orthopt. p. 522 (1859).

This genus includes a large number of species, spread over the whole world. It is probable that many of the South-American forms will eventually be found in Central America.

The tympanum is membranaceous in both elytra in the males, and peculiarly formed; its second transverse vein, instead of being parallel to the stridulating vein, is oblique and divides the speculum into two triangular cells.

Synopsis specierum.

1. Elytra perfecte explicata, abdomen superantia, alis semper breviora. Statura majore. Ovipositor brevis, falcatus. Lamina infra-genitalis ♂ excisa. Prosternum bispinosum. Tibiæ anticæ spinis 6 : 7 armatæ.
   2. Femora postica subtus inermia. Tibiæ 4 anticæ concolores, haud fusco-nigræ; frons pallida, immaculata.—ORCHELIMUM, Serv.
      3. Elytra femora postica haud vel parum superantia. Statura crassiore.
         4. Statura minor. Elytra alis subæquilonga.—[1. *agile*, de Geer.]
      4, 4. Statura major; elytra alis distincte brevior.—[2. *glaberrimum*, Burm.]
   3, 3. Elytra femora postica valde superantia. Statura gracilior.—[3. *inerme*, Redt.]

2, 2. Femora postica subtus spinosa (tantum extus spinulosa).
   5. Tibiæ omnes superne nigræ vel infuscatæ.—[4. *nigripes*, Scudd.]
   5, 5. Tibiæ omnes superne fusco-nigræ.
      6. Elytra apicem femorum posticorum haud attingentes, quam alæ parum breviora.—[5. *cuticulare*, Serv.]
      6, 6. Elytra apicem femorum distincte superantia, quam alæ distincte breviora; pronotum concolor.—[6. *nitidum*, Redt.]

1, 1. Statura minor, gracilior. Ovipositor rectus vel parum incurvus; statura minor, gracilior. Prosternum bispinosum.—XIPHIDIUM, Serv.
   2. Elytra abdomen superantia, quam alæ breviora. Lobi laterales pronoti margine postico recto. Cerci ♂ crassi, obtusi, apicem versus depressi; lamina infra-genitalis apice haud bidentata; styli filiformes.
      3. Femora postica subtus spinula unica vel nulla.
         4. Lobi geniculares postici bidentuli.
            5. Verticis rostrum leviter ascendens, facie apicali elongato-trigonali, in plano frontis jacens. Ovipositor quam femora postica brevior.—7. *fasciatum*, de G.
            5, 5. Verticis rostrum fortiter ascendens, facie apicali angustiore, cuneiformi, oblique supera.—8. *resinum*, sp. n.
         4, 4. Lobi geniculares postici unidentati.—9. *unispina*, sp. n.
      3, 3. Femora postica subtus spinulis compluribus instructa; abdomen concolor.—10. *saltator*, Sss.

2, 2. Elytra abbreviata; abdomen superantia, quam alæ longiora.
   3. Ovipositor longissimus. (Elytra vix pronoti longitudine.) Verticis rostrum latum. Lamina infra-genitalis ♂ apice truncata.—[11. *strictum*, Scudd.]

3, 3. Ovipositor quam femora postica haud longior; cerci ♂ crassi, apice obtuso, depresso.
4. Femora postica subtus inermia vel spinula unica armata.
5. Elytra ♂ fere pronoti longitudine, ♀ breviora. Ovipositor longior, femorum posticorum longitudine.—[12. *tæniatum*, Redt.]
5, 5. Elytra ♂ ♀ quam pronotum longiora. Ovipositor brevior, quam femora postica frequenter brevior.
6. Pronoti lobi laterales margine postico nonnihil sinuato.
7. Elytra longiora; femora postica apice concoloria.—[13. *brevipenne*, Scudd.]
7, 7. Elytra breviora; femora postica apice fusco-nigra.—14. *ictum*, Scudd.
6, 6. Pronoti lobi laterales margine postico rectissimo. Verticis rostrum latum, anterius inferne valde coarctatum. Elytrorum area marginalis haud infuscata.—15. *propinquum*, Redt.
4, 4. Femora postica spinulis compluribus armata.
5. Verticis rostrum latum, anterius trigonale, inferne valde coarctatum.
6. Femorum posticorum genicula concoloria vel tantum apice extremo fusco. Elytra ♂ ♀ pronoto plus quam duplo longiora. Ovipositor femoribus posticis longior.—[16. *ensiferum*, Scudd.]
6, 6. Femorum posticorum genicula nigro-nitida.—17. *mexicanum*, Sss.
5, 5. Verticis rostrum angustum, anterius marginibus lateralibus subparallelis. Pronotum superne fuscum. Ovipositor femoribus posticis longior.—18. *angustifrons*, Redt.

[1. **Xiphidium agile,** de Geer.

Locusta agilis, de Geer, Mém. des Ins. iii. t. 40. fig. 3 (1778).

Xiphidium agile, Burm. Handb. der Ent. ii. p. 707 (1839); Thomas, Trans. Illinois St. Agr. Soc. v. p. 445; Redt. Monogr. der Conoceph. p. 186 (1891).

Hab. North America, Southern States.]

[2. **Xiphidium glaberrimum,** Burm.

Xiphidium glaberrimum, Burm. Handb. der Ent. ii. p. 707 (1839); Redt. Monogr. der Conoceph. p. 187.

Orchelimum glaberrimum, Scudd. Bost. Journ. Nat. Hist. vii. p. 453 (1862); L. Bruner, Orthopt. of Kansas (Bull. Washb. Coll. i.), p. 128.

Hab. North America, Southern States.]

[3. **Xiphidium inerme,** Redt.

Orchelimum longipenne, Scudd. Bost. Journ. Nat. Hist. vii. p. 453 (1862); Bruner, Orthopt. of Kansas (Bull. Washb. Coll. i.), p. 129.

Xiphidium inerme, Redt. Monogr. der Conoceph. p. 187.

Hab. North America, Kansas, Texas.]

[4. **Xiphidium nigripes,** Scudd.

Orchelimum nigripes, Scudd. Proc. Bost. Soc. Nat. Hist. xvii. p. 459 (1875); Bruner, Orthopt. of Kansas (Bull. Washb. Coll. i.), p. 129.

Xiphidium nigripes, Redt. Monogr. der Conoceph. p. 188.

Hab. NORTH AMERICA, Missouri, Colorado, Kansas, Texas.]

[5. **Xiphidium cuticulare,** Serv.

Orchelimum cuticulare, Serv. Hist. Nat. des Ins. Orthopt. p. 523 (1839).

Xiphidium cuticulare, Redt. Monogr. der Conoceph. p. 189.

Hab. NORTH AMERICA.]

[6. **Xiphidium nitidum,** Redt.

Xiphidium nitidum, Redt. Monogr. der Conoceph. p. 189.

Hab. NORTH AMERICA, Georgia.]

7. **Xiphidium fasciatum,** de Geer.

Locusta fasciata, de Geer, Mém. des Ins. iii. t. 40. fig. 4 (1778).

Xiphidium fasciatum, Serv.; Burm.; de Haan; Scudd.; Thomas; Bruner; Provancher; Bolivar; Stål; Redt. Monogr. der Conoceph. p. 192; Boliv. Mém. Soc. Zool. Fr. i. p. 152 (1888); Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 30 (1896).

Hab. NORTH AMERICA, United States.—MEXICO, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Temax in N. Yucatan (*Gaumer*); GUATEMALA; COSTA RICA, Caché (*Rogers*); PANAMA, Punta de Sabana, Isthmus of Darien.—GUIANA, Cayenne; ARGENTINA; ANTILLES, Cuba, Puerto Rico, Guadeloupe.

A widely distributed species in the warmer parts of America.—Comp. infra, *X. saltator.*

8. **Xiphidium resinum,** sp. n. (Tab. XIX. figg. 26, 27.)

♂. *X. unispinæ* simillimum, sed lobis genicularibus femorum posticorum, sicut in *X. fasciato,* de G., bidentulis. Differt ab *X. unispino* formis verticis.

Verticis rostrum magis compressum, a latere supra valde *ascendens*; ejus facies antica angusta, quam primus articulus antennarum sensim angustior; ejus apex rotundatus *ad superum* spectans ejus pars infera subacuminata. Cerci intus dente armati, apice depresso-rotundati.

♂. Long. 13; pronot. 3; elytr. 19; femor. post. 12 millim.

FIGURES.—Fig. 26, the upper part of the head, from in front.—Fig. 27, ditto, in profile.

Hab. MEXICO, Orizaba (*H. H. Smith, F. D. G.*).

9. **Xiphidium unispina,** sp. n.

♂. Viridis vel pallescens. Antennæ concolores. Verticis rostrum supra horizontale, anterius primo articulo antennarum æquilatum, marginibus inferius convergentibus; superne macula fusca. Caput et pronotum vitta fusca longitudinali ornata vel bilineata, ac utrinque ad vittam per vittam angustiorem luteam ornata.

Lobi laterales pronoti inferne valde angulati, margine postico recto, leviter undato, margine antico haud sensim angulato. Prosternum bispinosum. Elytra femora postica superantia. Campus tympanalis rotundatus, in utroque elytro vitreus, in areolasque 3 divisus. Alæ elytra superantes. Femora omnia subtus inermia; postica lobis genicularibus unispinosis. Tibiæ anticæ utrinque 6-spinosi. Lamina supra-analis late trigonalis, apice rotundata. Cerci crassi, subteretes, intus pone laminam supra-analem dente armati, tertia parte apicali attenuata, apice styliformi, subacuto. Lamina infra-genitalis carinata, late truncata; stylis in ejus angulis exsertis, minutis, haud acutis.

Var. Lamina infra-genitalis rotundato-truncata.

♀. Long. 17; pronot. 4; elytr. 20; femor. post. 15 millim.

Hab. Mexico, Jalisco (*Schumann*), Orizaba (*Saussure*).

10. **Xiphidium saltator,** Sauss. (Tab. XIX. fig. 28.)

Xiphidium saltator, Sauss. Rev. et Mag. Zool. (2) xi. p. 208 (1859); Redt. Monogr. der Conoceph. p. 193.

Var. ? Viridis, vitta dorsali fusca. Femora postica subtus spinosa. Elytra quam in typo breviora, dimidium ovipositorem attingentia, quam femora paulo breviora. Alæ illa parum superantes. Ovipositor quam in typo brevior. [Guiana.]

♀. Long. 15; pronot. 3·3; elytr. 14, femor. post. 14; ovipos. 7·5 millim.

Figure:—Fig. 28, the female insect, magnified.

Hab. Panama. — Colombia; Venezuela; Guiana, Cayenne; Amazons; Brazil; Antilles, Cuba, St. Vincent.

The form described as a variety may prove to belong to a different species: we possess only one female of it.

Obs.—Signor Griffini (Bollett. dei Mus. di Zool. di Torino, xi. p. 30) treats *X. saltator* as a variety of *X. fasciatum*, and we are inclined to be of the same opinion, the number of spines on the hind femora being variable.

[11. **Xiphidium strictum,** Scudd.

Xiphidium strictum, Scudd. Proc. Bost. Soc. Nat. Hist. xvii. p. 460 (1875); Bruner, Orthopt. of Kansas (Bull. Washb. Coll. i.), p. 128; Redt. Monogr. der Conoceph. p. 205.

Hab. North America, Eastern and Central United States, Texas.]

[12. **Xiphidium tæniatum,** Redt.

Xiphidium tæniatum, Redt. Monogr. der Conoceph. p. 206.

Hab. North America, Texas.]

[13. **Xiphidium brevipenne,** Scudd.

Xiphidium brevipenne, Scudd. Bost. Journ. Nat. Hist. vii. p. 451 (1862); Canad. Nat. vii. p. 285; Provanch. Faune Ent. du Canada, p. 29 (1877); Boliv. Mém. Soc. Zool. Fr. i. p. 152 (1888); Redt. Monogr. der Conoceph. p. 206, t. 4. fig. 91.

Hab. North America, Canada and United States.—Antilles, Cuba.]

14. **Xiphidium ictum,** Scudd.

Xiphidium ictum, Scudd. Proc. Bost. Soc. Nat. Hist. xvii. p. 461 (1875); Redt. Monogr. der Conoceph. p. 207.

Hab. MEXICO, Orizaba, Mirador, Oaxaca (*Saussure*), Teapa in Tabasco (*H. H. Smith*).

15. **Xiphidium propinquum,** Redt.

Xiphidium propinquum, Redt. Monogr. der Conoceph. p. 208; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 29 (1896).

Hab. GUATEMALA (*coll. Dohrn*); PANAMA, Colon, Punta de Sabana and Tintin, Isthmus of Darien.—VENEZUELA; ANTILLES, St. Vincent.

[16. **Xiphidium ensiferum,** Scudd.

Xiphidium ensiferum, Scudd. Bost. Journ. Nat. Hist. vii. p. 451 (1862); Redt. Monogr. der Conoceph. p. 209.

Hab. NORTH AMERICA, Illinois, Iowa, Texas.]

17. **Xiphidium mexicanum,** Sauss.

Xiphidium mexicanum, Sauss. Rev. et Mag. Zool. (2) xi. p. 208 (1859); Redt. Monogr. der Conoceph. p. 210.

Hab. MEXICO, Presidio de Mazatlan (*Forrer*), Miacatlan in Morelos (*coll. Brunner*), Orizaba, Mirador, Oaxaca (*Saussure*); GUATEMALA (*coll. Dohrn*).

18. **Xiphidium angustifrons,** Redt.

Xiphidium angustifrons, Redt. Monogr. der Conoceph. p. 210; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 29 (1896).

Hab. PANAMA, Colon, Punta de Sabana, Isthmus of Darien.—COLOMBIA, Bogota, Tolima.

THYSDRUS, Stål.

Phlugis, Stål, Freg. Eugen. Resa, Ins. p. 324 (1860).

Thysdrus, Stål, Recens. Orthopt. 2, p. 102 (1874); Redtenbacher, Monogr. der Conoceph. p. 219.

The species of this genus are all of the same form and are very closely allied. They have been partly distinguished by the neuration of the elytra, but this character cannot be relied upon, the number of the transverse venulæ being somewhat variable. The elytra are in both sexes membranaceous.

Synopsis specierum.

I. *Feminæ.*

a. Ovipositor mediocris, falcatus, quam cerci longior.

b. Elytra ad apicem dense reticulata, venulis transversis numerosis.

c. Tibiæ anticæ utrinque spinis 5.

d. Area marginalis elytrorum venulis costalibus circiter 25.—1. *teres,* de Geer.

dd. Area marginalis elytrorum venulis costalibus circiter 7–15.—2. *virens,* Thunb.

cc. Tibiæ anticæ utrinque spinis 4–3.—3. *mantispa,* Bol.

bb. Elytra remote venulosa, apice late reticulata.—4. *mexicanus,* sp. n.

aa. Ovipositor brevissimus, quam cerci brevior; elytra remote reticulata.—5. *infirmus,* sp. n.

II. *Mares.*

a. Lamina supra-analis processibus teretibus decurvis instructa. Lamina infra-genitalis subtus carinata, ejus rami basi teretes, apice rhomboidaliter dilatati:

b. ejus rami basi brevissime teretes, ampliatione superne vix angulata. (Elytra densiuscule reticulata.)—2. *virens.*

bb. ejus rami basi distinctissime longiusculi teretes, ampliatione latiore, superne angulata. (Elytra remote reticulata.)—4. *mexicanus.*

aa. Lamina supra-analis absque appendicibus. Lamina infra-genitalis subtus plana, ejus rami tota longitudine dilatati, intus conchati.—3. *mantispa.*

1. **Thysdrus teres,** de Geer.

Locusta teres, de Geer, Mém. des Ins. iii. t. 40. fig. 5 (1778).

Phlugis teres, Stål, Freg. Eugen. Resa, Ins. p. 324 (1860).

Thysdrus teres, Stål, Recens. Orthopt. 2, p. 116 (1874); Redt. Monogr. der Conoceph. p. 221; Griffini, Bollet. dei Mus. di Zool. di Torino, xi. no. 232, p. 30 (1896).

Hab. Panama, Isthmus of Darien.—Colombia; Guiana; Brazil.

2. **Thysdrus virens,** Thunb. (Tab. XIX. fig. 29.)

Thysdrus virens, Thunb. Mém. Acad. St. Pétersb. v. p. 274 (1815); Stål, Recens. Orthopt. 2, p. 117 (1874); Redt. Monogr. der Conoceph. p. 224.

Phlugis chrysopa, Boliv. Mém. Soc. Zool. Fr. i. p. 152 (1888).

T. mexicano simillimus. Elytra apice densius reticulata; campo marginali venulis 12–15. Rami laminæ infra-genitalis superne in medio subtuberculati; eorum ampliatio a latere compressa, fusiformis, fere $\frac{4}{5}$ longitudinem ramorum occupans, apice acuto, margine superiore vix angulato.

♀. Long. 12–13·6; pronot. 3·3; elytr. 13; femor. post. 10; ovipos. 3 millim.

♂. Long. 10–11; pronot. 4; elytr. 11; femor. post. 8·2 millim.

Figure.—Fig. 29, the left elytron of the male, magnified.

Hab. Mexico, Cordova (*Saussure*); Panama, Chiriqui.—Colombia; Guiana; Amazons; Peru.

3. **Thysdrus mantispa,** Bol.

Phlugis mantispa, Boliv. Mém. Soc. Zool. Fr. i. p. 154 (1888).

Thysdrus mantispa, Redt. Monogr. der Conoceph. p. 222; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 132, p. 30 (1896).

Thalassina. Elytra femorum longitudine, apice dense reticulata, venulis transversis ubique numerosis. Tibiæ anticæ arcuatæ.

♀. Ovipositor falcatus, quam cerci duplo longior, quam in *mexicano* longior.

♂. Cerci breves, acuti, laminæ infra-genitali triplo breviores. Lamina infra-genitalis dimidia parte apicali fissa, parte basali lata, planula, ejus valvæ apicales subtus contiguæ, a latere tota longitudine dilatatæ, superne excavatæ, simul sumptæ foveolam ovatam formantes, apice contiguæ, planulæ, trigonales; a latere ampliatione elongato-ovata, parte basali æquilonga. Lamina supra-analis transversa, in medio minute trigonali-producta, puncto crasso nigro notata.

♀. Long. 12; pronot. 3; elytr. 17; femor. post. 10; ovipos. 3 millim.

♂. Long. 9; pronot. 3; elytr. 16; femor. post. 9·5 millim.

Hab. MEXICO, Vera Cruz, Teapa in Tabasco (*H. H. Smith*); PANAMA, Punta de Sabana, Isthmus of Darien.—GUIANA; AMAZONS; BRAZIL.

This species is well distinguished by the form of the anal appendages: the cerci are short, and the two apical branches of the infra-genital plate are dilated throughout their entire length.

4. **Thysdrus mexicanus,** sp. n.

Luteo-viridis. Antennæ concolores, basi anguste fusco-annulatæ. Pronotum gracile, elongatum, antice haud reflexum, postice rotundatum, processu minus longo quam lato, marginibus loborum lateralium postice obliquis, rectis, ad humeros pone angulum haud sinuatis. Elytra femora postica paulum superantia, hyalino-thalassina. Vena mediastina dimidiam longitudinem campi marginalis attingens. Venulæ transversæ campi marginalis circ. 12 subperpendiculares; areæ reliquæ venis parallelis remotis instructæ; illis campi discoidalis subperpendicularibus; illis campi analis leviter obliquis; apex elytri late reticulatus. Alæ vitreæ, venis virescentibus, elytra longe superantes. Femora antica spinis 3 : 4; femora postica apice subtilissime spinosa. Tibiæ anticæ leviter arcuatæ, spinis 5 : 5; intermediæ margine antico spinis 2. Cerci teretes, graciles, recti.

♀. Ovipositor brevis, validus. Lamina infra-genitalis rotundato-trigonalis; lamina supra-analis postice impresso-deflexa, in medio lobo rotundato minuto.

♂. Lamina supra-analis quam longior duplo latior, carinata, postice impressa, in medio margine lobulo rotundato prominulo instructa; ejus processus invicem remoti ex angulis lateralibus emergentibus, teretes, ad inferum valde arcuato-decurvi, apice obtusi. Lamina infra-genitalis subtus carinata, dimidia parte apicali fissa; ramis compressis, contiguis vel basi leviter remotis, in tertia parte basali gracilibus, subcylindricis, dehinc dilatatis; eorum ampliatione margine infero arcuato, superne rotundato-angulata, apice hebetato, haud acuto. Cerci dimidiam laminam infra-genitalem superantes.

♀. Long. 14; pronot. 3; elytr. 20; femor. post. 10; ovipos. 2·3 millim.

♂. Long. 12; pronot. 3; elytr. 10; femor. post. 9·5 millim.

Hab. MEXICO, Chilpancingo in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Gerónimo, Zapote (*Champion*); PANAMA, Bugaba (*Champion*).

This species seems to be allied to *P. tener*, Stål, from Brazil; but the latter apparently does not possess curved appendages to the supra-anal plate.

5. **Thysdrus infirmus,** sp. n. (Tab. XIX. figg. 30–32.)

♀. *T. mexicano* simillimus. Elytra apice reticulata; campo marginali venulis transversis 12–15; campus ulnaris venulis transversis numerosissimis. Femora antica superne nonnunquam unispinosa. Ovipositor *minimus*, parum arcuatus, quam cerci brevior.

♀. Long. 13; pronot. 3; elytr. 18; femor. post. 10; ovipos. 1·5 millim.

FIGURES:—Fig. 30, the female insect, magnified.—Fig. 31, the end of the abdomen, with its small ovipositor.—Fig. 32, the right elytron of the female.

Hab. GUATEMALA, San Gerónimo (*Champion*).—GUIANA, Cayenne (*Prudhomme*).

The short ovipositor distinguishes this species from all others of the genus.

[Group **LISTROSCELITES.**

Listroscelini, Redtenbacher, Monogr. der Conocephaliden, p. 217.

LISTROSCELIS, Serv.

Listroscelis, Serville, Rev. Méth. p. 64 (1831); Hist. Nat. des Ins. Orthopt. p. 396 (1839); Brullé, Hist. Nat. des Ins. ix. p. 160 (1835); Burmeister, Handb. der Ent. ii. p. 715 (1839); Redtenbacher, Monogr. der Conoceph. p. 229.
Cerberodon, Perty, Del. Anim. Art. Bras. p. 119 (1830); Stål, Recens. Orthopt. 2, p. 101 (1874).
Monocerophora, Walker, Cat. Derm. Salt. ii. p. 157 (1869).
Xiphidium, de Haan, Bijdr. tot Kenn. Orthopt. p. 190 (1842) (nec Serv.).

1. **Listroscelis arachnoides,** Redt.

Listroscelis arachnoides, Redt. Monogr. der Conoceph. p. 232.

Hab. COLOMBIA.]

Tribus PSEUDOPHYLLINÆ *.

Pseudophyllidæ, Brunner v. Wattenwyl.

Tarsi depressi, articulis primo et secundo utrinque dilatatis et longitudinaliter sulcatis. Caput rotundatum vel conicum. Antennæ basi contiguæ. Verticis rostrum breve, sulcatum, marginibus scrobum antennarum cinctum, ergo haud prominens. Pronotum sulcis transversis duobus distinctis impressum. Tibiæ anticæ supra planæ, raro teretes, foraminibus conchatis, sulcis lateralibus longitudinalibus nullis, spinis apicalibus nullis instructæ. Tibiæ posticæ supra spinis apicalibus destitutæ †. Elytra marium tympano instructa. (*Brunner v. W.*)

The Pseudophyllinæ may be divided into various groups by the structure of the elytra, three types of which may be here noticed, two of them being American :—

1. In this group the elytra are more or less narrow, generally but little coriaceous, and somewhat transversely convex—so that in repose they form a rounded sheath (cover?) for the body; they are cylindrical above, being compressed at the apex only. The surface of these organs is either grey and rough, imitating the bark of trees, or green, imitating leaves. In the males the anal field is small, and the tambourine much

* Principal recent works referred to for this tribe :—

C. STÅL, Recensio Orthopterorum, part 2. Stockholm, 1874.

CH. BRUNNER VON WATTENWYL, Monographie der Pseudophylliden. Wien, 1895.—A very complete and genuine monograph of this tribe, which we have followed in this work.

† This character distinguishes the Pseudophyllinæ from the Mecopodinæ, these latter having the posterior tibiæ armed with two apical spines. Redtenbacher, however, has pointed out that a few Australian species, which have quite the facies of Pseudophyllinæ, seem to make an exception in this respect; but Brunner v. Wattenwyl states that the venulation of the elytra of these aberrant forms is more like that of the Mecopodinæ, and he prefers including them in that tribe. The Mecopodinæ are not represented in the New World.

resembles that of the Conocephalinæ (comp. *anteà*, p. 374, and Tab. XIX. figg. 33, 34), but with the axillary veins (x', x'') at the base placed closer together and sometimes not distinctly separated. There is always a central speculum, of elliptic, ovate, or piriform shape. The tympanal field of the left elytron is frequently coriaceous, the speculum itself being opaque. The tympanal field of the right elytron is coriaceous, but bears always a large vitreous speculum; it has no second (external) speculum, as visible in the Conocephalinæ (Tab. XIX. fig. 34, *e*).

2. In the Group Pterochrozæ the elytra are very wide and completely flat, exactly imitating dead or living leaves; they fold together like two sheets of paper, as in the majority of the Lepidoptera Rhopalocera (only downwards instead of upwards), the elytra not enveloping the body, but concealing it between their two flat surfaces. In the males of the mimetic types (*Pterochroza*, *Mimetica*, *Typophyllum*, &c.) the anal field is very small, and the tambourine bears a small piriform speculum. In the less mimetic types, of green colour, the tympanal field is larger, and sometimes more or less coriaceous in both elytra.

3. In this group, as in the first, the elytra in repose form a cylindrical covering for the body, but they are very differently constructed. In the males the anal field is very large, wide, and extends nearly to the apex of the elytra, and it is modified in its whole length, so that the tambourine extends over the entire field; but the tambourine, however, is not membranaceous, the whole of the anal field being semicoriaceous. The second ulnar vein anastomoses with the anal vein, generally before the middle of its length, and at this place the anal field is cut by a transverse fold or sulcus (which extends also laterally across the ulnar area). The anal field is thus divided into three parts:—The first part is small, and occupies the base up to the stridulating vein; the second part, placed between the stridulating vein and the transverse ridge, forms an elongated square area which ought to contain the vitreous speculum, but this is completely wanting, and the whole area is reticulated; the third part, generally much the longest, occupies the posterior half of the anal field, and it is furnished with numerous approximate transverse veins, which perpendicularly pectinate the anal vein. The last-mentioned portion of the anal field, although more or less coriaceous, is, as well as the second portion, a sonorous field. In some species the male elytra are swollen, forming an ample covering round the body, and very sonorous, the second part of the tympanal field being extended very far back. The species of this section are confined to the Eastern Hemisphere, and form the groups Pseudophyllites and Phyllomimites ('Sauterelles vertes,' Pictet and Saussure).

We have omitted the genus *Aprion* from our enumeration, although one species, *A.* (*Acanthoprion*) *aztecus*, has been described by us as from Mexico *; we now have no doubt that the insect was labelled with a wrong locality.

* 'Sauterelles vertes,' p. 26, t. 3. fig. 21; Brunner v. W. Monogr. der Pseudophyll. p. 77.

Group **ACANTHODITES.**

Acanthodes, Brunner v. W. Monogr. der Pseudophyll. p. 102.

[XEROPTERYX, Redt. *

Xeropteryx, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 102, t. 5. fig. 45 (1895).

1. **Xeropteryx fumosa,** Brunn.

Xeropteryx fumosa, Brunn. v. W. Monogr. der Pseudophyll. p. 102.

Hab. South America.—Antilles, Guadaloupe.]

CHAMPIONICA, gen. nov.†

Caput subglobosum, anterius planatum; rostro verticis latiuscule rotundato, trigonali-excavato, scrobiculis antennarum breviore. Antennarum articulus primus apice dentatus. Pronotum a latere excavatum valde sellæforme. Pro- et mesozona supra fornicatæ. Margo anterior tuberculatus, in medio dente valido armatus; mesozona bituberculata; metazona valde ascendens, supra concava, margine postico arcuato, denticulato, antice utrinque spinoso. Lobi laterales quadrati, margine infero incrassato, verruculoso. Elytra longa, valde angusta, submembranacea, subparallela; margine antico ultra medium attenuato; vena mediastina brevi, subrecta, venis disci longitudinalibus. Alæ subamplæ, fusco-maculosæ. Foramina metasterni invicem quam a marginibus lateralibus vix æqualiter remoti. Pedes antici graciles. Femora antica quam pronotum fere duplo longiora, superne obsolete deplanata, haud marginata, subtus spinosa; intermedia compressa, subtus longiuscule spinosa; postica gracilia, sed ante medium sat incrassata, subtus tota longitudine spinosa. Lobi geniculares omnes valde spinosi. Tibiæ anticæ supra muticæ, foraminibus lineari-apertis; tibiæ intermediæ basi vix dilatatæ, superne fortiter biseriatim spinosæ; tibiæ posticæ utrinque æqualiter spinosæ.

♂. Elytrorum tympana bina speculo elliptico vitreo instructa. Cerci crassi, apice arcuati, mucronati. Lamina infra-genitalis elongata, apice parum attenuata, profunde sagittatim incisa, in ramos 2 teretes divisa. Styli longissimi.

This genus should be placed between *Xeropteryx*, Redt., and *Tetragonomera*, Stål. It is distinguished from *Xeropteryx* by the form of its pronotum, the very narrow opaque elytra, &c. From *Tetragonomera* it differs in having the pronotum spinose, with its posterior margin tuberculated in the middle and its anterior margin dentated; the elytra longer, not much attenuated at the tip, and more membranaceous; the anterior femora spinose beneath and not margined above; the intermediate tibiæ with a double row of spines above, &c.

1. **Championica montana,** sp. n. (Tab. XX. fig. 1.)

Fulvo-virescens vel pallide viridis. Frons albido-liliacea. Labrum margine infero fusco. Verticis rostrum latiusculum, foveolatum, basi bituberculatum. Pronotum supra opacum, ferruginescens, utrinque granulis paucis. Margo anterior verruculis paucis crenatus, in medio spina valida antrorsum vergente armatus et utrinque dentem ab illa remotum præbens. Mesozona subgranulata, arcuatim impressa, utrinque tuber-

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* This name has long been preoccupied in Insecta (Butler, 1883).

† Dedicated to Mr. G. C. Champion, who has collected a large amount of material for this work.

culum compressum rotundatum obferens. Metazona rufescens, fusco-umbrata, utrinque cornu longo nigrescente armata, margine postico luteo, denticulis trigonalibus crenato; dente laterali longiore. Lobi laterales longiores quam altiores. Elytra subvitrea, virescentia vel testaceo-hyalina, parte apicali parallela, apice rotundata; venæ longitudinales et transversæ magna parte fuscæ, vena discoidali tamen viridi. Venulæ inter illam et venam humeralem crassiusculæ, albido-callosæ, fere punctiformes. Venæ costales campi antici fuscæ, basi et apice albidæ, reticulationeque albida vel viridi. Venulæ transversæ campi discoidalis leviter obliquæ ad marginem proximalem fusco-limbatæ; reticulatio in areolis valde irregularis, viridis vel albescens. Alæ sordide hyalinæ, in areolis fusco-maculosis; campo anteriore maculis minoribus paucis notato. Venulæ transversæ irregulariter positæ, aggregatæ; aggregationibus per areolas hyalinas separatis; maculis fuscis itaque in areolis majoribus inter aggregationes positis. Pedes antici gracillimi. Femora omnia lobis genicularibus spinosis; anteriora et intermedia subtus spinis 4 concoloribus armata; postica tota longitudine remote spinosa. Tibiæ anticæ supra late sulcatæ, marginibus utrinque carinatis, carinis in quarta parte basali leviter tumidis; intermediæ superne margine interno spinis 3–4, externo 2–3, nonnunquam obliteratis vel gracilibus, appressis, instructæ.

♂. Segmentum anale transversum, truncatum, leviter bisinuatum. Lamina supra-analis rotundato-trigonalis impressa. Cerci teretes, apice subito incurvo, conico, supra elliptice impresso, ac minute unguiculato. Lamina infra-genitalis angusta, carinata, acute incisa, ramis apicalibus cylindricis; stylis longis, teretibus, apicem versus leviter attenuatis. Speculum in utroque elytro membranaceum.

♂. Long. corp. 44·5; pronot. 9; elytr. 50; femor. post. 36 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

TETANOPUS, Redt.

Tetanopus, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 106.

1. **Tetanopus nitidus,** Brunn.

Tetanopus nitidus, Brunn. v. W. Monogr. der Pseudophyll. p. 106, t. 5. fig. 48 (♀).

Hab. PANAMA, Chiriqui.—ECUADOR.

Unknown to us.

SAGEPHORUS, Redt.

Sagephorus, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 106.

1. **Sagephorus spinosus,** Brunn.

Sagephorus spinosus, Brunn. v. W. Monogr. der Pseudophyll. p. 107, t. 5. fig. 49 (♂).

Hab. MEXICO.

Unknown to us.

ACANTHODIS, Serv.

Acanthodis, Serville, Rev. Méth. p. 54 (1831); Orthopt. p. 450; Burmeister; Stål; Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 108.

[1. **Acanthodis bicuspidata,** Brunn.

Acanthodis bicuspidata, Brunn. v. W. Monogr. der Pseudophyll. p. 110.

Hab. COLOMBIA, Medellin.]

2. **Acanthodis humilis,** Brunn.

Acanthodis humilis, Brunn. v. W. Monogr. der Pseudophyll. p. 111.

Hab. ? Costa Rica.

3. **Acanthodis unispinosa,** Brunn.

Acanthodis unispinosa, Brunn. v. W. Monogr. der Pseudophyll. p. 111.

Hab. Guatemala, Vera Paz (*Mus. Berol.*).

4. **Acanthodis cristulata,** Brunn. (Tab. XX. figg. 2, 3.)

Acanthodis cristulata, Brunn. v. W. Monogr. der Pseudophyll. p. 112.

Statura minore. Fulvescens vel rufescens. Antennæ inæqualiter nigro-annulatæ. Pronotum margine antico granuloso, in medio in processum spiniformem compressum, elevato-tuberculatum ac obtuse dentatum elevatum, utrinque pone marginem spina divergente armatum; prozona insuper in disco utrinque tuberculo prominulo instructa; metazona lata, planula, utrinque vix reflexa, margine postico ♀ rotundato, ♂ parabolico, toto longe multi-spinoso. Elytra concoloria, plagis nitidis nigris conspersa, abdomen paulum superantia, basi lata, apice valde attenuata. Alæ semiorbiculares, infuscatæ, venulis transversis congregatis et colore pallido circumdatis. Sternum concolor. Pedes modice longi. Femora anteriora subtus 3-spinosa; intermedia 4-spinosa; postica spinis longis teretibus 6 armata. Tibiæ anticæ infra foramina utrinque lobo trigonali instructæ marginibusque foraminum lobatis, necnon supra margines in medio utrinque tuberculo obsoleto præditæ. Tibiæ intermediæ superne utrinque trilobati; lobis trigonalibus; posticis acutis. Tibiæ posticæ spinis trigonalibus acutis, apice arcuatis, supra utrinque 7–8 armatis. Abdomen lævigatum, segmentis supra apice leviter dentatis.

♀. Ovipositor basi rectus, ultra medium leviter arcuatus, valde attenuatus ac niger. Lamina infra-genitalis triangularis, apice minime incisa.

♂. Minor. Elytra breviora. Segmentum anale supra incisum. Lamina supra-analis trigonalis, rotundata. Lamina infra-genitalis compressa, incisa; stylis longissimis teretibus instructa.

Larvæ. Larvæ quam imagines magis spinosæ; abdominis segmentis supra spinis longis arcuatis armatis; pronoti metazona brevi, valde transversa.

♀. Long. corp. 28; pronot. 11; femor. post. 20; ovipos. 13 millim.

♂. Long. corp. 24·5; pronot. 10; elytr. 16·5; femor. post. 13 millim.

Figures:—Fig. 2, the female insect.—Fig. 3, its ovipositor.

Hab. Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Brunner's original description was made from a larva from an unknown locality.

5. **Acanthodis variegata,** Brunn.

Acanthodis variegata, Brunn. v. W. Monogr. der Pseudophyll. p. 112.

Hab. Mexico (*Mus. Berol.*).

Unknown to us.

[6. **Acanthodis modesta,** Brunn.

Acanthodis modesta, Brunn. v. W. Monogr. der Pseudophyll. p. 113.

Hab. Colombia, Medellin.]

7. **Acanthodis repanda,** Stål.

Pleminia repanda, Stål, Recens. Orthopt. 2, p. 78 (1874).
Acanthodis repanda, Brunn. v. W. Monogr. der Pseudophyll. p. 113.

Hab. Mexico, Cordova.

Unknown to us.

ADECLUS, Brunn.

Adeclus, Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 114.

1. **Adeclus brevipennis,** Brunn.

Adeclus brevipennis, Brunn. v. W. Monogr. der Pseudophyll. p. 114.

Sat minutus, fulvescens, fusco-irroratus; pronoto supra vitta longitudinali flava; femoribus posticis prope basin et ante apicem fascia transversa flava; abdomine fulvescente, fusco-marmorato. Antennæ fuscæ, ultra medium remotissime luteo-annulatæ. Pronotum margine antico unispinoso; disco quadridentato; margine postico truncato-marginato. Elytra abdomine paulo breviora, rugosa, nitido-plagiata. Alæ infuscatæ. Femora anteriora quadrispinosa; postica 4–7-spinosa. Tibiæ anticæ supra basi tuberculosæ; intermediæ supra bispinosæ; posticæ utrinque graciliter spinosæ.

♀. Ovipositor falcatus, basi luteus, apice fuscus, utrinque tumore basali fusco. Lamina infra-genitalis trigonalis, apice minute incisa.

♂. Tympanum elytri sinistri speculo membranaceo instructum. Segmentum anale truncatum, trigonali-impressum. Lamina supra-analis transverse trigonalis. Cerci leviter arcuati, breviter acuminati, apice pallide tuberculati. Lamina infra-genitalis longiuscula, profunde incisa, stylis teretibus longis, subtus basi sulcatis, instructa.

Var. *a.* Corpus plus minus flavescens vel fuscescens; femorum vittis obsoletis.—*b.* Caput brunneum, lateribus fulvis; vitta dorsali pronoti aurantiaca. Elytra venis virescentibus, saltem illis campi lateralis, necnon illis campum tympanalem circumdantibus, luteis. Abdomen segmentis 3-6 supra luteis.—*c.* Corpus, saltem pronotum, virescens.

♀. Long. corp. 23; pronot. 5; elytr. 15; femor. post. 22; ovipos. 13 millim.

♂. Long. corp. 18; pronot. 4; elytr. 12; femor. post. 13 millim.

Hab. Mexico, Orizaba (*Mus. Genavense*).

[2. **Adeclus spiculatus,** Stål.

Acanthodis spiculata, Stål, Öfv. Vet.-Akad. Förh. xxx. 4, p. 49 (1873); Recens. Orthopt. 2, p. 82.
Adeclus spiculatus, Brunn. v. W. Monogr. der Pseudophyll. p. 114, t. 5. fig. 52 (♀).

Hab. Colombia, Antioquia.]

HÆMODIASMA, Brunn.

Hæmodiasma, Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 115.

1. **Hæmodiasma tessellata,** Brunn.

Hæmodiasma tessellata, Brunn. v. W. Monogr. der Pseudophyll. p. 115, t. 5. fig. 53 (♀).

Hab. Panama, Chiriqui.

Unknown to us.

Group **PLEMINIITES.**

Pleminiæ, Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 118.

DASYSCELUS, Redt.

Dasyscelus, Redtenbacher, in Brunn. v. Wattenwyl's Monogr. der Pseudophyll. p. 118.

[1. **Dasyscelus atrifrons,** Brunn.

Dasyscelus atrifrons, Brunn. v. W. Monogr. der Pseudophyll. p. 119.

Hab. COLOMBIA.]

LICHENOCHRUS, Karsch.

Lichenochrus, Karsch, Ent. Nachr. xvi. p. 268 (1890); Berl. ent. Zeitschr. xxxvi. p. 105 (1891); Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 125.

Synopsis specierum, secundum Brunn. v. W.

a. Alæ unicolores, infumatæ, venulis transversis plerumque pallide circumdatis. Pronoti lobi laterales haud expansi. Insecta grisea, statura minore.

b. Frons concolor vel sordide cærulescens (vel castanea). Species testaceæ.

c. Tibiæ posticæ margine interno 11–12-spinulosæ. Ovipositor rectus.

d. Alæ infumatæ, haud fasciatæ. Ovipositor minor, angustior, margine infero parum arcuato.—[1. *variabilis*, Brunn.]

dd. Alæ in venulis transversis pallide lineatæ. Ovipositor robustior.—2. *vaginalis*, sp. n.

cc. Tibiæ posticæ margine interno 9–10-spinulosæ. Species ochracea, fusco-marmorata, alis haud pallide lineatis.—3. *brevistylus*, sp. n.

bb. Frons nigra vel infuscata.

c. Frons fusca. Tibiæ posticæ margine interno spinis 11–12.

d. Lobi laterales pronoti rotundato-inserti. Alæ pallide lineatæ.—2. *vaginalis*, var.

dd. Lobi laterales pronoti subacute inserti. Alæ unicolores.—[4. *modestus*, Brunn.]

cc. Frons macula magna nigra. Species ochracea, fusco-marmorata. Tibiæ posticæ margine interno spinis 10.—5. *nigrifrons*, sp. n.

aa. Alæ tessellatæ, statura majore. Pectus nigrum. Femora postica in latere interno pallida. Ovipositor femore postico longior.—6. *muticus*, Brunn.

[1. **Lichenochrus variabilis,** Brunn.

Lichenochrus variabilis, Brunn. v. W. Monogr. der Pseudophyll. p. 128.

Hab. COLOMBIA; BRAZIL, Pernambuco.]

2. **Lichenochrus vaginalis,** sp. n.

Statura *L. variabilis*. Griseo- vel rufo-testaceus; pedibus plus minus fusco-marmoratis vel punctatis. Frons concolor vel castaneus. Pronotum dense granulosum; canthis dorsalibus in prozona nullis. Lobis lateralibus parum elevatis, margine antico haud sensim sinuato. Elytra abdomen superantia, concoloria, frequenter maculis minutis fuscis irregulariter conspersa, campi marginalis venis concoloribus. Alæ semiorbiculares,

fuscescentes, lineis transversis pallidis tessellatæ. Femora anteriora subtus spinis 3; intermediæ 4; posticæ 5–6, apice nigris. Tibiæ intermediæ supra margine postico spinis 1 vel 2; posticæ spinis 12–9, apice nigris. Abdomen concolor.

♀. Ovipositor validus, quam pronotum fere triplo longior, rectus; dimidia parte basali testacea, tumore basali et dimidia parte apicali nigris; margine supero crenulato, apice integro. Lamina infra-genitalis trigonalis, apice minute incisa.

♀. Long. corp. 27; pronot. 7; elytr. 27·5; femor. post. 19; ovipos. 18·5, lat. 3·8 millim.

Hab. GUATEMALA (*Mus. Genavense*).

This species is closely allied to *L. variabilis*, Brunn., from Colombia and Brazil, differing from it in having transparent borders to the transverse venulæ of the wings and a longer and stouter ovipositor.

3. **Lichenochrus brevistylus,** sp. n.

L. variabilis major. Fulvo-grisea, plus minus fusco-marmorata. Pronotum dense granulosum, dorso plano; canthis lateralibus explicatis, intus arcuatis per sulcos 2 valde incisis. Lobi laterales quam in *L. variabili* altiores, infere sensim coarctati, antice obtusanguli, postice rectanguli, margine infero leviter undato, margine antico haud sinuato. Discus flavidus, maculis fuscis lineis 2 formantibus, in medio conjunctis, abbreviatis, ornatus; margine postico medio fusco-bimaculato. Lobi laterales ad canthos fusco-marginati, in medio fuscescentes, marginibus late flavicantibus. Elytra abdominis longitudine, fulvescentia, fusco-marmorata. Alæ semiorbiculares, infuscatæ, campo marginali fulvescente; area mediastina basi fusca, margine anguste decolore. Pedes fusco-maculosi. Femora antica et intermedia subtus spinis 4; postica 6, et ante illas margine triundato. Spinæ omnes luteæ. Tibiæ intermediæ supra spinula 1, posticæ margine interno spinulis 11–12.

♀. Ovipositor margine supero recto (nympha).

♂. Cerci crassi, teretes, apice incurvo, mucronato. Lamina infra-genitalis triangulariter incisa; stylis teretibus brevioribus instructa (quam lati vix quadruplo longi).

♂. Long. corp. 30; pronot. 7; elytr. 28; femor. post. 19; styli 1·5 millim.

Hab. MEXICO, Cordova (*Mus. Genavense*).

This species must be placed near *L. variabilis* and *L. vaginalis*. It may readily be known by the acute margin of the disc of pronotum, the lateral lobes of which are higher than in the other species of the genus; the shorter and straighter femora; and the less elongate elytra of the male, these being six times as long as wide in *L. variabilis*.

[4. **Lichenochrus modestus,** Brunn.

Lichenochrus modestus, Brunn. v. W. Monogr. der Pseudophyll. p. 129.

Hab. COLOMBIA.]

5. **Lichenochrus nigrifrons,** sp. n.

Statura media. Ochracea, plus minus fusco-marmorata. Antennæ fusco-annulatæ. Frons tota fusco-nigra. Pronotum sparsius, in mesozona crassius granulatum. Prozona tota fornicata, canthos haud explicatis, lateraliter costata. Metazona margine postico sensim arcuato, canthis lateralibus prominulis, granosis, antice valde convergentibus ac sinuatis. Pronotum supra et lateraliter ad canthos irregulariter fusco-lineatum, ad marginem posticum medium maculis elongatis 2 nigris notatum. Elytra et alæ concoloria, in areolis fusco-maculata (in marginibus verisimiliter fusco-tessellata). Femora antica pronoto sesqui-

longiora, subtus spinis 3; intermedia 4; postica 7–8. Tibiæ posticæ fusco-marmoratæ, margine interno spinis 11–12 armatis. Pectus fusco-maculatum. Abdominis segmenta subtus omnia macula magna fusca.

♂. Cerci elongati, arcuati, compressi, supra fusco-marmorati, apice leviter tumido, rotundato ac minute acumi nato. Lamina infra-genitalis trigonali incisa, stylis teretibus sat longis instructa (subimago).

Long. corp. 31; femor. post. 21 millim.

Hab. Mexico, Orizaba (*Mus. Genavense*).

We have ventured to name this species, although known to us only by a nymph, on account of its particular coloration. It seems to be nearest allied to *L. hilaris*, Brunn., or to *L. muticus*, Brunn.

The larva of another species before us, from Cordova, has the forehead maculated with black and differs from the present insect in having four spines only on the outer margin of the hind tibiæ, and the anterior margin of these limbs furnished with small tubercles.

6. **Lichenochrus muticus,** Brunn.

Lichenochrus muticus, Brunn. v. W. Monogr. der Pseudophyll. p. 131.

Hab. Panama, Chiriqui (*coll. Dohrn*).

Unknown to us.

BRISILIS, Stål.

Brisilis, Stål, Öfv. Vet.-Akad. Förh. xxx. 4, p. 46 (1873); Recens. Orthopt. 2, p. 62; Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 132.

1. **Brisilis curvidens,** Stål.

Brisilis curvidens, Stål, Obs. Orthopt. (Bihang till Svenska Vet.-Akad. Handl.) iii. p. 39 (1875); Brunn. v. W. Monogr. der Pseudophyll. p. 133.

Hab. Panama, Chiriqui.

Unknown to us.

PRISTES, Redt.

Pristes, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 135.

1. **Pristes tuberosus,** Stål.

Platyphyllum tuberosum, Stål, Obs. Orth. (Bihang till Svenska Vet.-Akad. Handl.) iii. p. 40 (1875).

Pristes tuberosus, Brunn. v. W. Monogr. der Pseudophyll. p. 135, t. 6. fig. 60; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 16, no. 234, fig. (♂)* (1896).

Variat tibiis intermediis 1- vel 2-spinosis; color fusco-griseus plus minus marmoratus; ventris segmentis nigris.

♂. Styli laminæ supra-analis in nostro individuo longissimi, valde pilosi, ultra medium leviter dilatati, apice attenuati, obtusi vel subangulati, subtus in medio carina obliqua notati.

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* Dr. Griffini's figure is given to show a monstrosity with a very small atrophied hind leg.

Hab. Nicaragua, Chontales (*Janson*); Costa Rica (*Van Patten*); Panama, Chiriqui (*colls. Dohrn & Brunner*), Isthmus of Darien (*E. Festa*).—Colombia, Medellin.

Group **PLATYPHYLLITES.**

Platyphylla, Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 136.

PLATYPHYLLUM, Serv.

Platyphyllum, Serville, Ann. Sci. Nat. xxii. p. 145 (1831); Orthopt. p. 450; Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 137.

1. **Platyphyllum luridum**, Brunn.

Platyphyllum luridum, Brunner v. W. Monogr. der Pseudophyll. p. 142.

Hab. Guatemala (*coll. Dohrn*).—Guiana, Surinam.

Unknown to us.

2. **Platyphyllum toltecum**, Sauss. (Tab. XX. figg. 33–35.)

Acanthodis tolteca, Sauss. Rev. et Mag. Zool. (2) xi. p. 206 (♀) (1859).
Platyphyllum toltecum, Brunn. v. W. Monogr. der Pseudophyll. p. 142 (♀).

Validum, staturæ *P. consanguinei*, fulvo-testaceum. Pronotum sparse verruculosum, sulcis profunde impressis. Elytra angusta, campo marginali basi quam in *P. consanguineo* minus dilatata, apice rotundato-acuminata. Alæ fuscæ, irregulariter reticulatæ, venis aggregatis, transverse pallide tessellatæ. Femora antica haud compressa, gracilia, supra teretes, subtus spinis 3; intermedia spinis 4; postica spinis numerosis, concoloribus. Tibiæ intermediæ prope basin spina unica armatæ.

♀. Lamina supra-analis excavata, apice incisa, bidentata. Valvulæ anales apice spinula vel processu minuto obtuso instructæ. Ovipositor quam in *P. consanguineo* gracilior; parte apicali nigra, margine superiore recto.

♀. Long. corp. 51·5; pronot. 10; elytr. 51; femor. post. 34; ovipos. 25 millim.

Figures:—Fig. 33, the pronotum, ♀, from above, magnified.—Fig. 34, ditto, in profile.—Fig. 35, the ovipositor.

Hab. Mexico, Vera Cruz (*Saussure*).

[3. **Platyphyllum consanguineum**, Serv. (Tab. XX. figg. 36, 37.)

Acanthodis consanguinea, Serville, Orthopt. p. 454 (1839).
Platyphyllum consanguineum, Stål, Recens. Orthopt. 2, p. 81; Bolivar, Artróp. del Viaje al Pacifico, p. 62; Brunn. v. W. Monogr. der Pseudophyll. p. 141.
Acanthodis regina, Sauss. Rev. et Mag. Zool. (2) xi. p. 207 (♀) (1859).

Figures.—Fig. 36, the female insect.—Fig. 37, the apex of the male abdomen, from below: *c*, cerci; *s*, infra-genital plate.

Hab. Guiana, Cayenne.]

[LISSOPHYLLUM, Redt.

Lissophyllum, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 143.

1. **Lissophyllum angustixiphum**, Brunn.

Lissophyllum angustixiphum, Brunn. v. W. Monogr. der Pseudophyll. p. 146.

Hab. COLOMBIA, Bogota.]

Group **MERONCIDIITES.**

Meroncidii, Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 148.

MERONCIDIUS, Serv.

Meroncidius, Serville, Ann. Sci. Nat. xxii. p. 52 (1831); Orthopt. p. 448; Brunner v. W. Monogr. der Pseudophyll. p. 148.

1. **Meroncidius fuscus**, Brunn.

Meroncidius fuscus, Brunn. v. W. Monogr. der Pseudophyll. p. 150.

Hab. GUATEMALA (*coll. Brunner*).

Unknown to us.

BRACHYAUCHENUS, Brunn.

Brachyauchenus, Brunner v. Wattenwyl, Monogr. der Pseudophyll. p. 160.

Synopsis specierum.

a. Styli marium apice clavati.—[1. *castaneus*, Brunn.]

aa. Styli marium haud clavati.—2. *festæ*, Griff.

[1. **Brachyauchenus castaneus**, Brunn.

Brachyauchenus castaneus, Brunn. v. W. Monogr. der Pseudophyll. p. 160, t. 7. fig. 73 (♂).

Hab. COLOMBIA, Santa Fé de Bogotá.]

2. **Brachyauchenus festæ**, Griff.

Brachyauchenus festæ, Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 16 (♂) (1896).

Ferrugineo-testaceus, totus dense pilosus. Caput ferrugineo-castaneum; labro flavo; cranium fasciis 2 latis fuscioribus antice convergentibus notatum. Pronotum subsellæforme, totum dense minute haud acute granulosum; marginibus granulosis, postico excepto, margine antico tuberculo minimo acuto instructo; sulco postico paulum ante medium sito; metazona subconcaviuscula, maculis duabus magnis eburneis ornata. Lobi laterales quam altiores sesqui-longiores. Elytra abdomen æquantia, apice rotundato-subacuminata. Alæ infumatæ. Femora breviuscula, compressa; lobi geniculares spinis modicis triangularibus armati; femora antica et intermedia subtus spinulis 3, postica 6. Tibiæ anticæ superne planæ, inermes, conchis sat hyantibus; posticæ utrinque spinulosæ, spinulis marginis interni valde robustioribus.

♂. Cerci breviusculi, cylindrici, apice mucronato-incurvi. Lamina supra-analis parva; lamina infra-genitalis sat elongata, apice concava, stylis modicis haud clavatis instructa.

♂. Long. corp. 21·5; pronot. 6·5; elytr. 14·5; femor. post. 11 millim.

Hab. PANAMA, Isthmus of Darien.

Dr. Griffini observes that the diagnosis of the genus must be somewhat modified to include this species, which has the pronotum tuberculate anteriorly, without acute granulations, and the posterior sulcus placed before the middle of its length, and the styli of the male clavate.

GONGROCNEMIS, Redt.

Gongrocnemis, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 163 (1895).

Synopsis specierum, secundum Brunn. v. W.

1. Tibiæ anticæ in utroque sexu ad foramina vel infra illa marginibus productis.
   2. Frons concolor. Pronotum in medio tuberculatum. Tibiæ intermediæ supra 2:1-spinulosæ; tibiæ anticæ infra foramina tumida.—1. *tibialis*, Brunn.
   2, 2. Frons fusca vel viridis. Pronotum in medio haud tuberculatum. Tibiæ intermediæ supra 2:2 trigonali-dentatæ; tibiæ anticæ in ipso margine foraminum tumidæ.—2. *dentipes*, sp. n.

1, 1. Tibiæ anticæ margine antico haud vel parum producto.
   2. Alæ venulis transversis pallide circumdatis.
      3. Spinæ femorum pallidæ vel tantum apice nigræ.
         4. Rostrum verticis integrum. (Tibiæ posticæ superne utrinque multispinosæ. Lamina infra-genitalis stylis filiformibus instructa.)
            5. Spinæ femorum pallidiores quam femora. Frons leviter infuscata. Femora antica subtus 4-spinulosa. Tibiæ anticæ infra foramina leviter tumescentes. Statura majore.—3. *pallidespinosa*, Brunn.
            5, 5. Spinæ femorum haud pallidiores. Frons concolor. Tibiæ anticæ haud tumescentes. Lamina infra-genitalis profundissime incisa.
               6. Statura minore. Femora antica subtus 3-spinosa.—4. *deminuta*, Brunn.
               6, 6. Statura majore. Femora antica subtus 4-spinosa.—5. *fissa*, sp. n.
         4, 4. Rostrum verticis apice minute incisum.
            5. Frons pallida. Pronotum utrinque ad insertionem loborum lateralium nigro-vittatum.
               6. Tibiæ posticæ in margine externo tantum 4-spinulosæ.—6. *bivattata*, Brunn.
               6, 6. Tibiæ posticæ in margine externo 7-spinulosæ.—7. *zendala*, sp. n.
            5, 5. Frons nigra. Pronotum unicolor. Tibiæ posticæ in utroque margine multo-spinulosæ.—8. *incerta*, Brunn.
      3, 3. Spinæ femorum nigræ.
         4. Elytra venis fuscioribus vel nigris. Femora antica subtus 6-spinulosa.
            5. Statura majore. Pronotum præcipue in prozona distinctius granosum.—9. *nigrospinosa*, Brunn.

5, 5. Statura minore. Pronotum in prozona obtuse granosum.—10. *accola,* Brunn.

4, 4. Elytra venis concoloribus. Femora antica subtus 5-spinulosa. (Pronotum margine antico supra, necnon metazona postice late, atris.)—[*atrosignata,* Brunn. (Peru).]

2, 2. Alæ unicolores. (Spinæ femorum concolores vel apice infuscatæ.)

3. Frons pallida. Pectus concolor.

4. Pronotum lobis deflexis concoloribus. (Pronotum dense granosum. Tibiæ intermediæ superne bispinulosæ.)—[*unicolor,* Brunn. (Brazil).]

4, 4. Pronotum lobis deflexis totis infuscatis vel nigro-vittatis.

5. Tibiæ intermediæ superne muticæ.

6. Pronotum granulosum. Styli marium breviores.

7. Corpus superne et elytra unicoloria, griseo-testacea. Ovipositor margine supero leviter sinuato.—11. *mutica,* Brunn.

7, 7. Flavescens, fusco-marmorata; pronotum supra fusco-notatum. Elytra maculosa.—12. *azteca,* sp. n.

6, 6. Pronotum rugosum sed haud granulosum, superne unicolor. Elytra fusco-testacea, castaneo-marmorata. Species Brasiliensis.—[*parva,* Brunn. (Brazil).]

5, 5. Tibiæ intermediæ superne ut solitum bispinulosæ. Flavescens, fusco-marmorata; pronotum superne utrinque vitta longitudinali angusta nigra ornatum.

6. Spinæ femorum concolores. Elytra fusco-marmorata.—13. *munda,* Brunn.

6, 6. Spinæ femorum posticorum nigræ.

7. Spinæ femorum omnium nigræ. Lobi geniculares postici ut solitum inermes. Elytra grisea. Ovipositor brevis, basi latus (fig. 7).—14. *brevicauda,* sp. n.

7, 7. Spinæ femorum 1, 2 concolores. Lobi geniculares femorum posticorum minute spinosæ. Elytra areolis nigris notata.—15. *danielis,* Griff.

3, 3. Frons infuscata. Pectus nigrum. (Statura minore. Frons leviter infuscata. Pronotum lobis lateralibus ad insertionem fusco-fasciatis. Femora postica 6-spinulosa. Lamina infra-genitalis ♂ stylis oblique truncatis instructa.)—[*truncatistyla,* Brunn. (Amazons).]

1. **Gongrocnemis tibialis,** Brunn.

Gongrocnemis tibialis, Brunn. v. W. Monogr. der Pseudophyll. p. 165.

Hab. PANAMA.—COLOMBIA, Medellin (*coll. Brunner*).

2. **Gongrocnemis dentipes,** sp. n.

Griseo-fulvescens, fusco-marmorata. Antennæ fusco-annulatæ. Verticis rostrum sulcatum. Frons fusca vel viridis, genis luteis, vitta postoculari viridi vel fusca. Pronotum supra pallidum, sparse granulatum, sulcis profunde impressis, disco inter sulcos valde constricto, margine obsolete tuberculato; mesozona haud tuberculata; metazona rugulosa, canthis utrinque arcuatis, acutis; margine postico arcuato. Lobi laterales superne nigro-marginati vel nigro-bifasciati, margine postico nigro-maculoso, parum obliquo. Elytra apice valde attenuata, fusco-maculosa, venis partim viridibus. Alæ hyalino-fumosæ, venis campi antici ferrugineis, venulis transversis nec agglomeratis nec pallide lineatis. Femora antica et intermedia subtus spinis trigonalibus 4 postice fuscis; posticis spinis trigonalibus 5 et spinulis 4–5 Tibiæ anticæ a latere basi dilatatæ, margine foraminum inferius tumido, obtuse tuberculato vel a latere obtusangulo.

Tibiæ intermediæ in dimidia parte basali dilatatiusculæ, dentibus trigonalibus utrinque 2, vel 3 : 2. Tibiæ posticæ multispinosæ, spinis sat trigonalibus.

♂. Segmentum anale punctis nigris 3 notatum; in processum trigonalem, deflexum, politum productum. Cerci lutei, breves, teretes, apice brevissime incurvi, unguiculati. Lamina infra-genitalis profunde sinuata, in ramos styliformes 2 longissime producta; stylis ipsis brevissimis, obtusis, infuscatis, quam rami laminæ infra-genitalis fere dimidio brevioribus.

♂. Long. corp. 26·5; pronot. 6; elytr. 30; femor. post. 21 millim.

Hab. Costa Rica, Caché (*Rogers*).

This species is allied to *G. tibialis*, Brunn. It differs from it in having stronger femoral spines, and the anterior tibiæ tuberculated at the inferior part of the margins of the foramina, instead of below them. The middle of the pronotum is not tuberculate; the wings are not tessellated with pale-coloured bands, and they have rather regular transverse venulæ.

3. **Gongrocnemis pallidespinosa,** Brunn.

Gongrocnemis pallidespinosa, Brunn. v. W. Monogr. der Pseudophyll. p. 165, t. 7. fig. 75.

Fulvescens, valde fusco-irrorata, subtilissime albido-punctata. Vertex et fasciæ 2 laterales ab oculis emissæ, fusci. Pronotum granulatum, supra et lateraliter irregulariter in longitudinem fusco-fasciatum, margine antico et postico fusco-maculato; metazona rugulosa, canthis valde expressis, margine postico arcuato, valde marginato. Elytra elevato-venosa, virescentia, fusco-marmorata, maculis rotundatis oblongis impleta. Alæ infuscatæ, venulis transversis pallidis. Pedes valde fusco-marmorati. Femorum spinæ pallidæ, in anterioribus subtus 4–5; in intermediis 4; in posticis 6–7. Tibiæ anticæ infra foramina leviter tumescentes, præcipue in maribus; intermediæ supra bispinosæ.

♀. Ovipositor validus, rectus, dimidia parte apicali et tumore basali nigris. Lamina infra-genitalis late trigonalis, apice incisa.

♂. Lamina supra-analis trapezina, angulis rotundatis. Cerci elongati, arcuati, apice unguiculati (sinistro basi compresso). Lamina infra-genitalis plana, incisa; stylis elongatis, rectis.

Var. *a.* Corpus irregulariter marmoratum, vittis capitis et pronoti minus distinctis. Frons viridis, fastigio fusco. Margo posterior pronoti minus arcuatus, canthis metazonæ minus expressis. Elytra testacea vel fusco-punctata. Alarum lineæ pallidæ irregulares. Ovipositor basi tumore haud nigra.—*b.* Frons virescens, utrinque linea pallida. Caput obscurum, vitta infra oculos pallida.—(Mirandilla.)

♀. Long. corp. 35; pronot. 8·5; elytr. 35; femor. post. 30; ovipos. 22·5 millim.

♂. Long. corp. 38; pronot. 10; elytr. 36; femor. post. 25 millim.

Hab. Mexico, Durango (*coll. Brunner*), Presidio in Sinaloa (*Forrer*); Guatemala, Balheu in Vera Paz, Mirandilla (*Champion*), Vera Paz (*colls. Brunner &c.*).

The specimens from Northern Mexico, including both sexes, are larger and have darker elytra than the Guatemalan individuals here treated as a variety, but we are unable to distinguish them by description.

4. **Gongrocnemis deminuta,** Brunn.

Gongrocnemis deminuta, Brunn. v. W. Monogr. der Pseudophyll. p. 166.

Statura modica, rufo-castanea. Antennæ pallide annulatæ. Verticis rostrum trigonale, hebetatum. Pronotum valde granulosum, supra rufo-flavum; lobis lateralibus fuscis, margine flavido. Elytra brunnea, fusco-marmorata. Alæ infuscatæ, omnino pallide lineatæ. Pedes marmorati. Femora antica subtus 3-, intermedia 4-, postica 5–6-spinulosa; spinis pallidis, concoloribus. Tibiæ intermediæ supra spinulis 2 posticæ rufo-testaceæ, multispinosæ.

♀. Ovipositor sat gracilis, rectus, apice et tumore basali nigris. Lamina infra-genitalis trigonalis, minute incisa.

♂. Minor. Pronotum minus fortiter subobsolete granulatum. Segmentum anale bi-incisum, lobo medio minuto, rotundato, supra foveolato. Cerci breves, crassi, subarcuati, obtusi, apice tuberculo minuto nigro. Lamina infra-genitalis profunde cordiformiter vel trigonaliter acute incisa; stylis longiusculis, leviter arcuatis, intus apice haud incrassatis.

Var. *a*. Frons fusco-virescens.—*b*. Femora antica subtus quadrispinosa.—*c*. Pronotum utrinque vitta nigra notatum.—*d*. Pronotum unicolor.—*e*. Tota griseo-testacea, haud fusco-marmorata. Pronotum tenuiter sparse granulatum (anne species?).

♀. Long. corp. 35; pronot. 7; elytr. 32; femor. post. 20·5; ovipos. 20 millim.

♂. Long. corp. 22; pronot. 6; elytr. 23; femor. post. 18·5 millim.

Hab. GUATEMALA (*Mus. Genavense*), Capetillo (*Champion*).

The general description is taken from a female specimen from Capetillo. This example has the pronotum more strongly granulate than in the male. The last-mentioned sex is easily distinguishable by the emarginate infra-genital plate, this being divided for half its length. *G. deminuta* resembles *G. fissa*, but it is much smaller, and the styli are not incrassate at the apex as in that species.

5. **Gongrocnemis fissa,** sp. n. (Tab. XX. fig. 4.)

Magna, fulvescens, fusco-marmorata vel castanea. Frons pallida. Pronotum antice subtiliter granulatum, in medio crassius remote granulosum; margine anteriore tuberculo nigro instructo; disco lineis fuscis notato; metazona postice plana, læviuscula, margine postico arcuato, canthis explicatis. Lobi laterales unicolores vel infuscati. Elytra valde fusco-marmorata, maculis rotundatis pallidis confertim tessellata, venis valde expressis, apice haud acuto. Alæ fuscæ, in parte media et antica irregulariter parce pallide tessellatæ, lineolis et punctis pallidis sicut in *G. mexicana* notatæ. Femora 1, 2 quadrispinosa, postica spinis 7. Tibiæ anticæ infra foramina marginibus leviter productis; intermediæ supra 2-spinosæ; posticæ multispinosæ; spinæ omnes apice nigræ.

♂. Cerci arcuati. Lamina supra-analis rotundato-trigonalis, sulcata. Lamina infra-genitalis profundissime fissa, stylis longissimis, leviter arcuatis, apice subtumidis.

♂. Long. corp. 34; pronot. 8; elytr. 38·5; femor. post. 25 millim.

FIGURE :—Fig. 4, the infra-genital plate of the male: *s*, styli.

Hab. GUATEMALA (*Oltramare, Mus. Genavense*).

A larger species, approaching *G. pallidespinosa*, Brunn., but differing from it in having the infra-genital plate divided for two-thirds of its length. The elytra are adorned with pale rounded maculæ, which form a sort of mosaic pattern, as in *G. pallidespinosa*, var. The wings are very slightly tessellated with pale colour.

Obs.—*G. truncatistyla*, Brunn., from Brazil, has a divided infra-genital plate, but with short and obliquely truncated styli.

6. **Gongrocnemis bivittata,** Brunn.

Gongrocnemis bivittata, Brunn. v. W. Monogr. der Pseudophyll. p. 166.

Hab. MEXICO (*coll. Bolivar*); GUATEMALA (*Mus. Genavense*).

7. **Gongrocnemis zendala,** sp. n.

Fusco-fulvescens vel leviter virescens; pedibus luteo- et fusco-marmoratis. Antennæ fuscæ, in parte proximali luteo-annulatæ. Verticis rostrum apice obtusum, haud emarginatum. Frons concolor. Pronotum dense granulatum; metazona supra rugulata, margine antico haud tuberculato, postico truncato, vix arcuato; canthis lateralibus explicatis, dorso fulvo, antice et postice virescente; lobis lateralibus appressis, virescentibus, superne nigro-marginatis. Elytra grisea, brunneo-maculosa, campo marginali simpliciter oblique venosa. Alæ fuscæ, campo antico testaceo; campo intermedio et postico partim in venulis parce irregulariter pallide fasciatis et maculosis; limbo toto et parte interno immaculatis. Pectus et abdomen concoloria. Femora gracilia, spinis parvis pallidis apice nigro armata; antica et intermedia spinis 4, postica 7–8. Tibiæ intermediæ supra spinis 1–2; posticæ margine exteriore spinis 7.

♀. Ovipositor modice longus, gracilis, apice niger, margine supero lævissime arcuato. Lamina infra-genitalis trigonali-incisa, bidentata.

♀. Long. corp. 34; pronot. 9; elytr. 38; femor. post. 23; ovipos. 20 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

Allied to *G. pallidespinosa*, Brunn., but the wings are not regularly tessellated as in that species; the ovipositor is more slender and somewhat arcuate; the rostrum of the vertex is scarcely emarginate.

8. **Gongrocnemis incerta,** Brunn.

Gongrocnemis incerta, Brunn. v. W. Monogr. der Pseudophyll. p. 167.

Hab. Mexico (*Mus. Genavense*); Guatemala (*coll. Brunner*).

9. **Gongrocnemis nigrospinosa,** Brunn.

Gongrocnemis nigrospinosa, Brunn. v. W. Monogr. der Pseudophyll. p. 167.

Hab. Mexico (*coll. Brunner*).

10. **Gongrocnemis accola,** Brunn. (Tab. XX. fig. 5.)

Gongrocnemis accola, Brunn. v. W. Monogr. der Pseudophyll. p. 167.

Minor, fulvo-testacea; fronte concolore vel fuscescente. Pronotum obsolete granulatum, postice truncatum, utrinque nigro-vittatum. Elytra subacuminata, translucide testacea, venis nigris. Alæ pallide infumatæ, obsolete hyalino-lineatæ. Pedes haud marmorati. Femora antica subtus spinis 5–7; intermedia 4; postica 7-spinosa. Tibiæ anticæ infra foramina leviter tumidæ, basi, in medio et apice, nigræ; intermediæ supra spinis 2. Femora postica apice plus minus nigra, spinæ omnes nigræ.

Var. *a*. Fuscescens, tibiis anticis supra nigris.—*b*. Flavescens, ornamentis nigris fere nullis; tibiis anticis vix fusco-notatis.—*c*. Tibiæ intermediæ spina unica, vel spinis 4.

♀. Ovipositor gracilis, rectus vel leviter arcuatus.

♂. Cerci crassi, brevissimi, obtusi. Lamina infra-genitalis stylis longis instructa.

♀. Long. corp. 28; pronot. 7·5; elytr. 24·5; femor. post. 23; ovipos. 17 millim.

♂. Long. corp. 30; pronot. 7·5; elytr. 25; femor. post. 21 millim.

Figure:—Fig. 5, the ovipositor of the female.

Hab. Guatemala (*Mus. Genavense; Rodriguez*).

11. **Gongrocnemis mutica,** Brunn. (Tab. XX. fig. 6.)

Gongrocnemis mutica, Brunn. v. W. Monogr. der Pseudophyll. p. 168 (♀).

Var. *a*. Tibiis intermediis muticis vel unispinosis.—*b*. Alis nonnunquam in parte anteriore venulis pallidis notatis.—*c*. Pronoti lobis lateralibus infuscatis vel supra fusco-marginatis.

♂. *Ineditus*. Cerci teretes, apice incurvi, unguiculati. Segmentum anale late truncatum, margine medio anguste depresso; lamina supra-analis late rotundato-trigonalis. Lamina infra-genitalis trigonali-incisa; stylis modice longis.

♀. Long. corp. 33; pronot. 7; elytr. 32; femor. post. 19·5; ovipos. 15 millim.
♂. Long. corp. 26; pronot. 7; elytr. 27·5; femor. post. 17·5 millim.

FIGURE:—Fig. 6, the ovipositor of the female.

Hab. MEXICO, Cordova (*Mus. Genavense; Höge*), Misantla in Vera Cruz (*F. D. G.*).

G. mutica may be a variety of *G. bivittata* with brown wings not tessellated with pale lines.

12. **Gongrocnemis azteca,** sp. n.

Statura media. Flavo-testacea, valde fusco-irrorata. Antennæ annulatæ. Caput pallidum; fronte, verticis pictura vittaque postoculari fuscis. Pronotum dense granulosum, margine antico minute tuberculato, canthis dorsalibus explicatis; disco vel lineis 2 irregularibus longitudinalibus fuscis notato; margine postico truncato, fusco-maculoso. Lobi laterales superne plus minus fusco-marginati et obsolete maculosi. Elytra grisea, virescentia, fusco-maculosa, venis elevatis, in areolis magnis densissime punctato-reticulata. Alæ infumatæ. Pedes valde fusco-marmorati. Tibiæ intermediæ supra muticæ. Femora antica subtus spinis 3, postica 6–7 armata; spinæ omnes flavidæ, apice nigro.

♀. Ovipositor arcuatus, margine supero tamen modice arcuato, dimidia parte apicali nigra.
♂. Segmentum anale transversum, margine medio late impresso. Lamina supra-analis late rotundato-trigonalis. Cerci crassi, teretes, apice curvato, unguiculato. Lamina infra-genitalis elongata, trigonali-incisa; stylis modice longis, obtusis munita.

Var. *a*. Statura major. Frons pallida. Pronotum in lateribus verruculosum, supra obsoletius granulatum; metazona vix rugulosa. Elytra griseo-flavicantia, parce fusco-maculosa. Alæ campo antico fulvescente, venulis transversis obsolete pallide fasciatis. Femora antica et intermedia subtus spinis 4. Lamina supra-analis impressa.—*b*. Alæ in parte anteriore leviter pallido-maculatæ. Tibiæ intermediæ spina unica instructæ.

♀. Long. corp. 32; pronot. 8·1; elytr. 34·5; femor. post. 21; ovipos. 17 millim.
♂. Long. corp. 18; pronot. 6; elytr. 25·5; femor. post. 17 millim.

Hab. MEXICO, Cordova in Vera Cruz (*Höge, Saussure*).

This species closely resembles *G. munda*, Brunn., but it is smaller and has the intermediate tibiæ unarmed above.

The pale maculæ of the elytra are variable in form, and when they are obliterated *G. azteca* might easily be confounded with *G. mutica*, Brunn.

13. **Gongrocnemis munda,** Brunn.

Gongrocnemis munda, Brunn. v. W. Monogr. der Pseudophyll. p. 169.

Hab. MEXICO (*Mus. Genavense*).

14. **Gongrocnemis brevicauda,** sp. n. (Tab. XX. fig. 7.)

Statura media vel minor. Fulvescens, tota valde fusco-marmorata. Antennæ fuscæ, haud annulatæ. Frons pallida; vertice infuscato. Pronotum fusco-vittatum, verruculosum; margine antico arcuato, haud tuberculato; metazona postice punctulata, margine postico parum arcuato, nigro-vario. Elytra acuminata, venis nigris; vena discoidali concolore; areolis fulvo-griseis. Alæ fumosæ. Femora antica subtus spinis 5; intermedia spinis 4–5; postica 6. Spinæ omnes nigræ; illæ tamen femorum posticorum postice pallidæ. Tibiæ anticæ inter foramina leviter tumidæ. Tibiæ intermediæ supra spinis 2 pallidis, apice nigris; posticæ multispinosæ, spinis basi macula nigra et apice nigro.

♀. Ovipositor brevis, rectus, basi latiusculus, a basi regulariter attenuatus, apice nigro.

♀. Long. corp. 34·5; pronot. 9; elytr. 29·5; femor. post. 24·5; ovipos. 16 millim.

FIGURE:—Fig. 7, the ovipositor of the female.

Hab. COSTA RICA, La Uruca (*Biolley*).

Very like *G. munda*, Brunn., from which it differs in having the spines of the legs black. It resembles also *G. accola* and *G. nigrospinosa*, Brunn., but the wings are not tessellated with pale lines as in those species; the pronotum is strongly granulated (while in *G. accola* it is only rugulose); the ovipositor (instead of being long and slender) is short and wide at the base, wider than in *Lichenochrus variabilis*, Brunn. The elytra are adorned with pale spots, which are arranged in a mosaic pattern, much as in *G. pallidespinosa* and *G. fissa*.

15. **Gongrocnemis danielis,** Griff.

Gongrocnemis danielis, Griff. Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 17 (1896).

Testacea, parum flavo-variegata. Epistoma flavidum. Verticis rostrum basi utrinque subtuberculatum. Frons sensim depresso-concava. Antennæ subannulatæ, articulo primo mutico. Pronotum granulato-rugosum, supra læte flavum; sulcis duobus optime impressis, sulco postico parum ante medium sito; margine anteriore arcuato, supra occiput sensim producto, minute tuberculato, mesozona et metazona utrinque tuberculis minutis præditis. Lobi laterales subobliqui, longiores quam altiores, testaceo-castanei, margine infero late limbato et in medio subtuberculato. Elytra testacea, parum nitida, venis concoloribus, maculis parvis nigris notatis; venulis transversis hinc illic appositis. Alæ dense infumatæ, venis flavidis haud pallide circumdatis. Foveolæ metasternales inter se æque remotæ quam a margine laterali, sulco subcurvato conjunctæ. Pedes robusti; femora antica vix compressa, subtus 4-spinosa; postica basi valde incrassata, spinis nigris 9 et basi spinulis 3 armata. Lobi geniculares excepto lobo interno femorum intermediorum obtusi; sub geniculo femorum posticorum tamen utrinque spina obtusa nigra appressa adest. Tibiæ anticæ infra foramina haud incrassatæ, intermediæ supra bispinulosæ. Basis coxarum extus superne nigrescens.

♀. Ovipositor testaceus, rectus, apice parum fuscior, acutus, marginibus minute serrulatis.

♀. Long. corp. 35; pronot. 9·8; elytr. 40; femor. post. 28; ovipos. 22 millim.

Hab. PANAMA, Isthmus of Darien.

The author points out that this species is intermediate between *Gongrocnemis* and *Lichenochrus*: the depressed forehead and the genicular spines of the hind femora are characters of *Lichenochrus*, but the metasternal foveolæ are placed as in *Gongrocnemis*.

ANCHIPTOLIS, Brunn.

Anchiptolis, Brunner v. W. Monogr. der Pseudophyll. p. 170.

Synopsis specierum.

a. Alæ totæ in venulis transversis pallide fasciatæ vel pallidæ, ubique fusco-maculatæ.
  b. Valida, castanea vel marmorata. Ovipositor validus, elongatus.—1. *mexicana*, Sss.
  bb. Minor, tota fulva. Ovipositor brevior, angustior.—2. *gaumeri*, sp. n.
aa. Alæ totæ infuscatæ, unicolores vel anterius parce luteo-signatæ. Cerci ♂ breves et crassi.
  b. Alæ anticæ luteo-punctatæ vel anterius lineolatæ. Lamina supra-analis ♂ haud producta. Lamina infra-genitalis profundissime divisa.
    c. Femora unicoloria vel marmorata. Marium styli apice subincrassata. (Pronotum unicolor.)—3. *subconspersa*, sp. n.
    cc. Pronotum supra et femora apice flavido-vittata. Marium styli gracillimi, apice attenuati. —4. *tenuistylus*, sp. n.
  bb. Alæ totæ fumosæ.
    c. Pectus pallidum.
      d. Cerci marium apice longe spinosi; pronotum ubique densissime verruculosum. Elytra acuminata, campo tympanali ♂ brevi.—[5. *peruviana*, sp. n.]
      dd. Cerci marium breves, valde incrassati et deplanati. Pronoti metazona utrinque obtuse tuberculata.—[*pleminioides*, Br. (S. Amer.).]
    cc. Pectus nigrum vel nigro-maculatum.
      d. Totus fulvescens, unicolor, abdomine fusco, pectore nigro-maculato. Pronotum dense fortiter granulatum sed haud tuberculatum. Cerci ♂ apice spinosi.
    dd. Pronotum fusco-varium.
      e. Statura minore. Pectus nigro-maculatum.—[*obtusus*, Br. (S. Amer.).]
      ee. Major, pectus totum nigrum.—[*excelsior*, Br. (S. Amer.).]

1. **Anchiptolis mexicana**, Sauss. (Tab. XX. figg. 8–10, ♀.)

Acanthodis mexicana, Sauss. Rev. et Mag. Zool. (2) xi. p. 206 (♂) (1859).

Acanthodis azteca, Sauss. loc. cit. p. 206 (♀).

Anchiptolis inconstans, Brunn. v. W. Monogr. der Pseudophyll. p. 170.

Fusco-castanea vel pallida. Antennæ concolores. Pronotum subselliforme, præcipue in maribus, læviusculum, margine antico tuberculato, postico leviter arcuato; metazona utrinque plus minus carinato-marginata, vel utrinque tuberculum elongatum rotundatum præbens. Elytra tota grisea vel fusco-maculosa. Alæ fuscæ, fasciis et lineis irregularibus pallidis valde marmoratæ. Femora gracilia spinis concoloribus armata; anticis et intermediis spinis 4; posticis 7.

♀. Ovipositor validus, longus, arcuatus, superne subrectus, dimidia parte apicali et tumore basali nigris, apice rugis nullis; lamina infra-genitalis lata, trigonalis, ovato- vel orbiculariter-incisa.

♂. Cerci longi, leviter arcuati. Lamina supra-analis in medio producta, trigonali-incisa, in dentibus 2 trigonalibus plus minus explicatis desinens. Lamina infra-genitalis apice trigonali, rotundato-incisa; stylis longiusculis.

Var. Pronotum obsolete granulatum; metazona postice rugulosa, utrinque tuberculo minuto instructa.

In coloribus species valde variabilis.—*a*. Pronotum superne flavidum, fusco-marmoratum; pedes fusco-marmorati; elytra punctis fuscis conspersa.—*b*. Elytra plagiis fuscis nitidis ornata, plus minus marmorata. —*c*. Alæ tantum pallide lineatæ.—*d*. Alæ late luteo-fasciatæ.—*e*. Alæ pallidæ, omnino fusco-maculosæ.

♀. Long. corp. 48; pronot. 10·5; elytr. 51; femor. post. 33·5; ovipos. 27 millim.
♀. Long. corp. 35; pronot. 8·5; elytr. 38; femor. post. 26; ovipos. 21·5 millim.
♂. Long. corp. 39; pronot. 9; elytr. 44·5; femor. post. 29 millim.
♂. Long. corp. 33·5; pronot. 8; elytr. 36; femor. post. 25 millim.

FIGURES:—Fig. 8, the male insect.—Fig. 9, the pronotum of the female, in profile, magnified.—Fig. 10, pronotum and head of the same from above, magnified.

Hab. MEXICO, San Salvador (*coll. Brunner*), Atoyac in Vera Cruz (*Schumann*), San Lorenzo, near Cordova (*M. Trujillo*), Orizaba (*Mus. Genavense*), Potrero, Mirador; GUATEMALA (*Mus. Genavense*).

2. **Anchiptolis gaumeri,** sp. n. (Tab. XX. fig. 11.)

Gracilis, statura media. Tota pallide rufo-fulvescens. Frons pallida. Pronotum sparse obsolete granulosum; metazona rugulosa, basi sparse rugulosa, verruculosa, marginibus lateralibus et posticis nigris vel nigro-signatis, margine postico arcuato. Elytra haud maculata, elevato-venosa. Alæ pallide lineato-tessellatæ. Pedes longi, graciles. Femora antica subtus spinulis 3; intermedia 4; postica spinis 7. Spinæ omnes basi et apice nigræ. Femora intermedia lobo geniculari interno spinoso; postica lobo geniculari interno spinula minima vel nulla instructo. Tibiæ intermediæ supra spinulis 2; posticæ multispinosæ; spinis apice nigris.

♀. Ovipositor sat parvus, margine supero recto, apice plus minus infuscato. Lamina infra-genitalis minute incisa.

♀. Long. corp. 37; pronot. 8; elytr. 37; femor. post. 27; ovipos. 16·5 millim.

FIGURE:—Fig. 11, the ovipositor of the female.

Hab. MEXICO, Temax in North Yucatan (*Gaumer*).

A distinct species, recognizable by its slender form and small ovipositor. The colour is very pale, but it may be more obscure in other individuals.

3. **Anchiptolis subconspersa,** sp. n.

Statura *A. inconstantis*. Fusco-castanea. Pronotum remote granulatum, margine antico minute tuberculato, postico arcuato, nigro-signato. Elytra concoloria, apice ♀ ♂ rotundata, obsolete brunneo-maculosa. Alæ fuscæ, campo anteriore et intermedio maculis nonnullis minutis pallidis. Femora antica et intermedia spinis 4; postica 7; spinæ luteæ, apice nigro, plerumque etiam basi nigræ, saltem in femoribus intermediis. Lobi geniculares internæ femorum posticorum dentiformes, haud spinosæ. Tibiæ intermediæ supra bispinosæ. Frons et pectus pallida.

♀. Ovipositor validus, rectus, dimidia parte apicali fusca. Lamina infra-genitalis minute incisa.

♂. Cerci breves, crassi, apice arcuato, unguiculato. Lamina supra-analis basi transversa, postice late quadrata, impressa, angulis rotundatis. Lamina infra-genitalis profunde fissa, vel potius longissime cordiformiter incisa, sicut in *Gongrocnemide fissa* (fig. 4). Styli longissimi, apice arcuati, subtumidi.

Var. Pedes fusco et luteo marmorati.

♀. Long. corp. 42·5; pronot. 10; elytr. 45; femor. post. 30; ovipos. 22 millim.

♂. Long. corp. 33; pronot. 8·5; elytr. 39; femor. post. 28 millim.

Hab. GUATEMALA (*Mus. Genavense*).

4. **Anchiptolis tenuistylus,** sp. n.

A. subconspersæ simillima, ejusdem staturæ; capite et pronoto vittis longitudinalibus 2 flavidis in medio confluentibus ornatis; metazona insuper vitta media flavida. Pronotum vix granulatum. Elytra brunneo-maculata. Alæ fuscæ; campo anteriore in venulis luteo-lineato; campo intermedio luteo-

punctato. Femora anteriora 4–5-spinosa. Lobi geniculares internæ femorum posticorum dentiformes, haud spinosis. Femora omnia ad apicem superne vitta lutea ornata. Tibiæ anticæ annulo luteo. Spinæ femorum concolores vel luteæ, apice nigro.

♂. Lamina supra-analis late trigonalis, sulcata. Cerci crassissimi, brevissimi, apice obtuso. Lamina infra-genitalis stylis gracillimis, apice attenuatis, intus sulcatis instructa.

Long. corp. 37; pronot. 9; elytr. 41; femor. post. 26 millim.

Hab. GUATEMALA, Panzos in Vera Paz (*Conradt*).

[5. **Anchiptolis peruviana,** sp. n. (Tab. XX. fig. 12.)

Fulvo-testacea vel rufescens, tota unicolor. Verticis rostrum angustum, basi tuberculos ocellares 2 prominulos præbens. Pronotum ubique verruculóso-tuberculatum, in sulco postico macula minuta nigra; margine antico frequenter tuberculo minuto nigro notato; margine postico arcuato. Elytra apice acuminata, venis concoloribus. Campus tympanalis elytri ♂ brevissimus; margine postico haud dilatato, scilicet marginem posticum elytri haud superante. Alæ hyalino-fuscescentes. Femora postica lobo geniculari interno spina minuta armato. Tibiæ intermediæ supra spinulis 2.

♂. Cerci teretes, apice incurvo, in spinam longiusculam excurrentes. Lamina infra-genitalis profunde incisa, apice valde attenuata, extus sinuata, in lobos 2 angustos producta; stylis longis, apicem versus leviter incrassatis instructa.

♂. Long. corp. 32; pronot. 7; elytr. 34; femor. post. 21 millim.

FIGURE:—Fig. 12, a cercus of the male (terminating in the form of a spine).

Hab. PERU (*Mus. Genavense*).

A species readily recognizable by the long spines of the cerci.]

IDIARTHRON, Brunn.

Idiarthron, Brunn. v. W. Monogr. der Pseudophylliden, p. 172.

This genus is chiefly confined to Central America, but extends southwards to the Amazon valley. All the species are very similar, and they can be separated only by the structure of the anal pieces. The colour is always fulvous-grey, but it is most likely somewhat olivaceous in life; the spines of the femora are usually black, but in one species those of the anterior and intermediate pairs are paler in colour. The form of the supra-anal plate is often difficult to make out, the anal pieces being partly or entirely concealed by the cerci.

The true limits of two of the species are not clear to us, on account of the singular variation in the shape of the anal pieces of the males.

I. incurvum is a very distinct species, characterized by the curved process of the supra-anal plate in both sexes and by the simple male cerci.

I. subquadratum seems also distinct by the short, quadrate supra-anal plate in both sexes, its pale colour and subpubescent surface (rarely rounded, corneous, rufous, and polished), and by the simple male cerci, these latter being conical at the tip and without a black apex.

I. furcatum is not so well defined, owing to the male cerci not being always distinctly furcated. Sometimes their superior branch becomes short or is reduced to a rounded

tubercle, and the inferior branch has another tubercle above at the base. In this case the cerci incline to the trituberculate form characteristic of *I. atrispinum*. The process of the supra-anal plate of the male has a foveola at the base; it is variable in length: when long, it is curved down at the base; in some specimens it is straight and only slopes downwards, in others it is shorter, forming a transition to that of *I. atrispinum*. In the females the supra-anal plate resembles that of the males: it is strongly corneous, rufous, deeply foveolate at the base, but shorter than in the males, and straightly attenuated posteriorly, truncate, and bidentate or tridentate, sometimes quite short.

I. atrispinum has the cerci of the males truncate, obtuse, terminated by three rounded stumps or tubercles, but sometimes the inner tubercle is prolonged and forms a sort of blunt hook. In this case, compared with the abnormal form frequent in *I. furcatum*, it is the superior branch of the fork which appears to be developed, while in *I. furcatum* it is the inferior branch, the superior one being here atrophied. The supra-anal plate of the male, in its typical form, is short and square (Tab. XX. fig. 21), trispinose, and has a strong foveola at the base; but in some specimens it becomes more elongate, quite resembling the process of *I. furcatum*, only somewhat shorter (fig. 17), making an evident transition to that species. These specimens, therefore, would appear to belong to *I. furcatum*, but in the form of the cerci they agree with *I. atrispinum*. In the females the supra-anal plate much resembles that of *I. furcatum*, it being elongate, corneous, rufous and shining, sulcate, and with a foveola at the base; but it is more regularly triangular, more widened at the base, much attenuated posteriorly, narrowly truncate, and rounded or very minutely bi- or trituberculate at the tip.

I. atrispinum and *I. furcatum* might thus be regarded as one species (?), with the supra-anal plate very variable in form in both sexes, and the cerci variable in form in the male.

Synopsis specierum.

1. *Mares.*
   - *a.* Lamina supra-analis in processum longum, angustum, ad inferum valde deflexum, apice leviter dilatatum, tridentatumque, producta.
     - *b.* Lamina supra-analis concolor, angusta, supra punctata, longissima, basi angustata, haud foveolata. Cercorum apex incurvus conicus.—1. *incurvum*, St.
     - *bb.* Lamina supra-analis nitida, minus longa, basi haud angustata, profunde foveolata. Cerci apice furcati (fig. 19).—2. *furcatum*, sp. n.
   - *aa.* Lamina supra-analis brevior, plana, haud decurva.
     - *b.* Lamina supra-analis longiuscula vel quadrata, apice tridentata, basi foveolata. Cerci brevissimi, apice haud attenuati, truncati, obtuse tricipites (fig. 21).—3. *atrispinum*, St.
     - *bb.* Lamina supra-analis quadrata, retro leviter attenuata, truncata vel margine postico obsoletissime triangulato, vel tantum angulis acutis. Cerci teretes, apice conico obtuso.—4. *subquadratum*, sp. n.

2. *Feminæ.*

a. Ovipositor dimidia parte postica tota nigra. Lamina infra-genitalis incisa.

b. Laminæ supra-analis processus valde angustus, tæniiformis, elongatus, ad inferum cochleatus, corneus, pallidus. Statura plerumque major.—1. *incurvum.*

bb. Lamina supra-analis plana, haud incurva.

c. Lamina supra-analis longiuscula, cornea, nitida, basi nigro-foveolata.

d. Lamina supra-analis subparallela, apice tridentata.—2. *furcatum.*

dd. Lamina supra-analis elongato-trigonalis, apice angusta, truncata.—3. *atrispinum.*

cc. Lamina supra-analis quadrata, coriacea, subexcavata, punctata, pallida —4. *sub quadratum.*

aa. Ovipositor margine inferiore toto pallido. Lamina infra-genitalis ♀ subquadrata.—5. *sub-notatum,* Br.

1. **Idiarthron incurvum,** Stål. (Tab. XX. figg. 13–15.)

Meroncidius incurvus, Stål, Obs. Orthopt. 1 (Bih. till Svenska Vet.-Ak. Handl. iii.), p. 41 (1875).
Idiarthron incurvum, Brunn. v. W. Monogr. der Pseudophyll. p. 172, t. 7. fig. 77 *c* (♂).

Majus, fulvo-griseum, unicolor. Pronotum verruculoso-granulatum; margine antico plus minus tuberculato, postico leviter arcuato. Elytra venis punctis brunneo-circumdatis et areolis marginis antici fuscis necnon maculis brunneis minutis ad conjunctionem venarum notata. Alæ pallide infuscatæ. Coxæ supra nigro-marginatæ. Femora 1, 2 spinis 4, apice nigris; postica spinis 7, totis nigris.

♀. Lamina supra-analis basi transversa, subabscondita, in medio processum tæniiformem parallelum ad inferum cochleatum, apice truncato-subincisum, vel subtridentatum formans (fig. 13, *s*). Lamina infra-genitalis trigonali-incisa. Ovipositor elongatus, gracilis, rectus, margine superiore leviter sigmoidali, inferiore parum arcuato, dimidia parte apicali nigra.

Var. *a.* Spinæ femorum 1, 2 totæ nigræ sicut in *I. atrispino.*—*b.* Venæ elytrorum concolores.

♂. Campus tympanalis sinister nigrescens vel niger, opacus. Segmentum anale truncatum, utrinque spinosum. Lamina supra-analis processum angustum basi curvatum, ad inferum valde deflexum, supra ubique punctatum formans; hic basi angustus, apice infundibuliformiter dilatatus, margine postico trilobato, lobo medio trigonali, lobis externis rotundatis. Cerci teretes, brevissimi, arcuati, crassissimi, apice minute unguiculato, vel rotundato vel attenuato. Lamina infra-genitalis elongata, angusta, in medio longitudinaliter depressa, rugulosa, anguste incisa; stylis apicalibus longissimis, valde deplanatis, submembranaceis, apice breviter attenuatis, rotundatis (lamina infra-genitali longioribus).

Var. ♂. Processus laminæ supra-analis obsolete sulcatus, margine apicali plus minus trilobatus vel vix tridentatus.

♀. Long. corp. 37; pronot. 10·5; elytr. 43·5; femor. post. 29; ovipos. 24 millim.
♀. Long. corp. 30; pronot. 8; elytr. 32; femor. post. 22·5; ovipos. 17 millim.
♂. Long. corp. 32; pronot. 9; elytr. 35·5; femor. post. 25 millim.

Figures:—Fig. 13, the apex of the abdomen, ♀, in profile: *s*, supra-anal plate; *c*, cercus.—Fig. 14, ditto, from above.—Fig. 15, the supra-anal plate of the male, from above: *s*, supra-anal plate; *a*, anal segment.

Hab. Panama, Chiriqui.—Venezuela; Amazons.

This species is well characterized by the extraordinary form of the supra-anal plate, this being somewhat similar in both sexes, but much shorter in the females than in the males. The cerci are obtuse and conical; they generally embrace the supra-anal plate so as to completely conceal it.

2. **Idiarthron furcatum,** sp. n. (Tab. XX. figg. 16–19.)

I. incurvo simillimum. Differt ab illo: elytris concoloribus, venis concoloribus. Femorum spinæ omnes nigræ; coxæ saltem intermediæ subtus nigræ. Pectus et pleuræ frequenter nigro-varia.

♀. Lamina supra-analis elongata, haud incurva, polita, basi valde foveolata, in medio leviter attenuata, apice dilatata, margine postico tridendato, vel angustiore, truncato.

♂. Lamina supra-analis illi *I. incurvi* subconformis, paulo latiore, polita, basi subdilatata ac valde foveolata. Cerci teretes, apice incisi vel furcati, ramo supero rotundato, infero producto, conico vel corniforme, vel per varietatem minus longo ac obtuso.

Var. *a*. Cerci distincte furcati (fig. 19).—*b*. Cerci obsolete furcati, ramo supero obliterato, tuberculiformi.

Figures:—Fig. 16, the supra-anal plate of the female.—Fig. 17, ditto, of the male: *s*, supra-anal plate; *a*, anal segment.—Fig. 18, the apex of the supra-anal plate of the male (variety).—Fig. 19, a cercus of the male.

Hab. Costa Rica (*Biolley*).

3. **Idiarthron atrispinum,** Stål. (Tab. XX. figg. 20, 21.)

Meroncidius atrispinus, Stål, Recens. Orthopt. 2, p. 84 (1874).

Idiarthron atrispinum, Brunn. v. W. Monogr. der Pseudophyll. p. 173, t. 7. figg. 7, 7 *a*, *b*.

I. incurvo simillimum; elytris frequenter unicoloribus; spinis femorum et coxis subtus nigris; pectore et ventre frequenter nigris.

♀. Lamina supra-analis elongato-trigonalis, foveolata, apice truncata.

♂. Lamina supra-analis quadrata vel sat elongata, recta, rugulosa, basi foveolata, margine postico trilobato, lobo medio trigonali, lobis lateralibus dentiformibus, perpendiculariter deflexis, vel cuneiformibus. Cerci brevissimi, crassi, teretes, intus basi haud dentati, haud attenuati, apice truncati, obtusi, tricipites, frequenter tuberculo interno producto.

Var. ♂. Lamina supra-analis elongata, apice dilatata, trilobata, fere sicut in *I. furcato*, at valde brevior et recta, haud incurva.

Figures:—Fig. 20, the supra-anal plate of the female: *s*, supra-anal plate; *a*, anal segment.—Fig. 21, the apex of the abdomen of the male, from above: *s*, supra-anal plate; *a*, anal segment; *c*, cerci.

Hab. Guatemala (*Mus. Genavense*); Costa Rica (*Biolley*), Caché (*Rogers*).

The variety is almost intermediate between *I. incurvum* and *I. atrispinum* in the form of the supra-anal plate, but it has cerci like those of *I. atrispinum*.

4. **Idiarthron subquadratum,** sp. n. (Tab. XX. figg. 22, 23.)

I. atrispino simillimum; differt ab illo:

♂. Lamina supra-anali concolore, basi lata, processu brevi, quadrato, vel postice leviter angustato, plano vel subexcavato, utrinque bicarinulato, margine postico truncato, angulis acutis, vel leviter minute trituberculato. Cerci breves, teretes, apice conici.

♀. Lamina supra-anali ejusdem formæ quam in maribus, quadrata, subexcavata, marginibus lateralibus deflexis, margine postico obsolete trituberculato vel subarcuato, in medio angulato vel subdentato.

Var. ♀. Statura paulo major. Lamina supra-analis brevis, cornea, nitida, trapezina, apice bidentula, foveolata.

Figures:—Fig. 22, the supra-anal plate of the female.—Fig. 23, ditto, of the male.

Hab. Guatemala (*Oltramare*), Pantaleon (*Champion*); Costa Rica (*Van Patten*).

5. **Idiarthron subnotatum,** Brunn.

Idiarthron subnotatum, Brunn. v. W. Monogr. der Pseudophyll. p. 173.

"Differt ab *I. atrispino* statura majore, elytris amplioribus, coxis tantum superne minime atro-notatis, ovipositore margine inferiore toto pallido, lamina infra-genitali ♀ subquadrata."

Hab. Costa Rica (*coll. Bolivar*).—Colombia, Bogota.

DREPANOXIPHUS, Brunn.

Drepanoxiphus, Brunner v. W. Monogr. der Pseudophyll. p. 173.

1. **Drepanoxiphus minutus**, Brunn.

Drepanoxiphus minutus, Brunn. v. W. Monogr. der Pseudophyll. p. 174, t. 7. fig. 78 (♀).

Hab. PANAMA, Chiriqui (*coll. Brunner*).

LIPAROSCELIS, Stål.

Liparoscelis, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 47 (1873); Recens. Orthopt. 2, p. 64; Brunn. v. W. Monogr. der Pseudophyll. p. 174.

1. **Liparoscelis nigrispinis**, Stål.

Liparoscelis nigrispinis, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 49 (1873); Recens. Orthopt. 2, p. 86; Brunn. v. W. Monogr. der Pseudophyll. p. 175.

Hab. MEXICO (*coll. Brunner*), Teapa in Tabasco (*H. H. Smith*).

2. **Liparoscelis pallidispina**, Stål.

Liparoscelis pallidispina, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 49; Recens. Orthopt. 2, p. 85; Brunn. v. W. Monogr. der Pseudophyll. p. 176, t. 7. fig. 80.

Hab. MEXICO, Cuernavaca (*coll. Brunner*).

[3. **Liparoscelis modesta**, Brunn.

Liparoscelis modesta, Brunn. v. W. Monogr. der Pseudophyll. p. 176.

Hab. COLOMBIA.]

[TRICHOTETTIX, Stål.

Trichotettix, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 47 (1873); Recens. Orthopt. 2, p. 64; Brunner v. W. Monogr. der Pseudophyll. p. 177.

1. **Trichotettix pilosus**, Stål.

Trichotettix pilosus, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 47 (1873); Recens. Orthopt. 2, p. 64; Brunn. v. W. Monogr. der Pseudophyll. p. 177.

Hab. COLOMBIA.]

Group **COCCONOTITES.**

Cocconoti, Brunner v. W. Monogr. der Pseudophyll. p. 178.

BLIASTES, Stål.

Bliastes, Stål, Obs. Orthopt. 1 (Bih. till Svenska Vet.-Ak. Handl.), iii. p. 47 (1873); Recens. Orthopt. 2, p. 65; Brunner v. W. Monogr. der Pseudophyll. p. 180.

Synopsis specierum, secundum Brunn. v. W.

a. Lobi geniculares femorum posticorum obtusi:
b. spinæ femorum concolores.—[1. *lineolalus*, Br.]
bb. spinæ femorum nigræ et basi nigro-circumdatæ. Frons atro-notata.
c. Frons lævis, tenuissime punctato-rugulosa.—2. *camerani*, Gr.
cc. Frons scabriuscula.—3. *lineatifrons*, Br.
aa. Lobi geniculares femorum posticorum utrinque acuminati:
b. spinæ femorum totæ nigræ. Pronotum margine antico toto et postico utrinque atro-limbato.
c. Frons concolor fusco-testacea.—[*limbatus*, Br., Para.]
cc. Frons vitta longitudinali atra.—4. *tæniatifrons*, sp. n.
bb. spinæ femorum unicolores.
c. Pronotum granulosum.
d. Frons atra. Femora antica unispinosa.—5. *atrifrons*, Brunn.
dd. Frons testacea. Femora antica 3–7-spinosa. Pronotum subcylindricum.
e. Pronotum unicolor, dense granosum. Alæ infuscatæ, circumcirca pallide marginatæ. Femora 1, 2 subtus 7-spinosa.—6. *fasciatus*, Br.
ee. Pronotum maculis vel lineolis nigris, verrucoso-granosum. Statura magna. Elytra unicoloria, testacea. Pedes unicolores.—7. *moristoides*, Br.
aaa. Sedis incertæ.—8. *punctifrons*, Stål.

[1. **Bliastes lineolatus**, Brunn.

Bliastes lineolatus, Brunn. v. W. Monogr. der Pseudophyll. p. 185.

Hab. COLOMBIA.]

2. **Bliastes camerani**, Griff.

Bliastes camerani, Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 19 (1896).

Robustus, fusco-testaceus. Caput magna parte nigro-fuscum. Antennarum articulus basalis intus obtusangulatum. Frons depressiuscula, tenuissime transverse punctato-rugulosa, atra, utrinque infra antennas vitta flavida et inferius utrinque carinula tuberculiformi prædita; genæ flavidæ, vitta infra-oculari nigra. Labrum et mandibulæ atra. Pronotum subsellæforme, dense, sat acute granulosum, fusco-castaneum, marginibus nigris; margine antico tuberculato, sulco postico valde pone medium sito; margine postico rotundato-truncato. Lobi laterales perpendiculares, parum longiores quam altiores, subrectanguli, margine infero subrecto, leviter obliquo. Elytra abdomen superantia, parum lata, subparallela, obscure testacea, punctis confertis fuscis ad venulas positis; margine suturali venulis fuscis, flavido- et fusco-tessellato; vena media ante tertiam partem apicalem excurrente. Alæ amplæ, infumatæ, venis majoribus flavidis. Pedes elongati, robusti, spinis nigris, geniculis pallidioribus. Femora supra teretia, lobi geniculares anteriores et intermediæ spina instructi. Femora antica et intermedia subtus spinis 4–5, postica 7–9. Tibiæ anticæ pronoto sesqui-longiores, supra muticæ, conchis sat hiantibus, testaceis; intermediæ supra subsulcatæ, supra muticæ. Abdomen castaneum, segmento ventrali septimo utrinque tuberculo modico prædito.

♀. Lamina supra-analis rotundata, concaviuscula. Ovipositor subrectus, parum latus, testaceus, apicem versus fuscior, basi niger, marginibus haud serrulatis. Lamina infra-genitalis triangularis, minime incisa.

♂. Lamina supra-analis rotundata. Cerci robusti, subcylindrici, apice incurvi. Lamina infra-genitalis elongata, apice attenuata, sat profunde incisa, stylis modicis crassiusculis instructa.

♀. Long. corp. 52; pronot. 10; elytr. 57; femor. post. 34; ovipos. 28 millim.

♂. Long. corp. 47–58; pronot. 9·5–10·5; elytr. 54–56; femor. post. 34 millim.

Hab. Panama, Isthmus of Darien.

Griffini points out that the anterior tibiæ of this insect are formed as in the genus *Cecentromenus*, Brunn. In the synopsis of the species of *Bliastes* given by Brunner v. Wattenwyl it would follow *B. scabrifrons* and *B. lineatifrons*.

3. **Bliastes lineatifrons,** Brunn.

Bliastes lineatifrons, Brunn. v. W. Monogr. der Pseudophyll. p. 187.

Frons haud depressa, scabriuscula, testacea, medio linea atra, lata, in clypeum perducta, necnon utrinque infra oculos linea angustiore signata. Labrum pone medium necnon mandibulæ totæ atræ. Pronotum granulosum, margine antico et margine loborum deflexorum anguste atro-marginatis. Elytris venis et venulis testaceis, areolis nigris. Femora nigro-spinulosa, antica et intermedia spinulis tribus, postica spinulis 5 ad 6 armata. Lobi geniculares femorum posticorum obtusi. Tibiæ anticæ ad foveolas annulo pallido signatæ. Cerci ♂ basi crassi, pone medium attenuati et acuminati. Lamina infra-genitalis ♂ attenuata, stylis parvis instructa. ♂ larva. (*Brunner v. W.*)

Hab. Honduras (*coll. Brunner*).

4. **Bliastes tæniatifrons,** sp. n. (Tab. XX. fig. 25.)

Gracilis, fulvo-testaceus vel rufescens. Frons haud depressa. Caput supra fusco-nigrum. Facies vitta angusta longitudinali nigra in basi clypei producta. Labrum apice nigrum. Mandibulæ nigræ, basi paulum testaceæ. Pronotum supra subtiliter granulosum, postice rugulosum, sulco postico valde impresso; margine anteriore toto et margine posteriore loborum lateralium nigris. Lobi laterales de reliquo pallidiores. Elytra concoloria, venis prominulis, campo marginali dense reticulato, areolis nigris, campo discoidali areolis nonnullis nigris ad venam discoidalem positis. Spinæ femorum et tibiarum nigræ sed haud nigro circumdatæ; femora anteriora spinis 2; intermedia 3; postica 5. Lobi geniculares femorum posticorum breviter spinosi. Tibiæ anticæ supra haud denticulatæ.

♀. Lamina supra-analis trigonalis. Ovipositor sat gracilis, margine superiore et inferiore saltem in parte apicali late castaneo, inter illos vitta fulva notatus, margineque superiore basi nigro; valvis superioribus ad apicem infra tuberculis 2, in medio tuberculis obsoletis 3 instructis. Lamina infra-genitalis rotundato-trigonalis, sulcata.

♀. Long. corp. 29·5; pronot. 6·5; elytr. 32; femor. post. 16·5; ovipos. 15 millim.

Hab. Guatemala, Lanquin in Vera Paz (*Champion*).

This species closely resembles *B. lineatifrons*, Brunn., from Honduras, but differs from it in the spinose genicular lobes of the hind femora, a character bringing it into the second group of the genus, near *B. atrifrons*, Brunn.

5. **Bliastes atrifrons,** Brunn. (Tab. XX. fig. 24.)

Bliastes atrifrons, Brunn. v. W. Monogr. der Pseudophyll. p. 190.

Statura minore; fulvo-testaceus. Facies planiuscula, polita, tota nigra vel, si mavis, vitta lata nigra. Os testaceum. Caput supra fusco-nigrum. Pronotum ad sulcum posticum leviter constrictum, supra valde granulatum, fusco-rufum. Elytra concoloria, areolis saltem in campo marginali fuscis. Pedes graciles, spinis concoloribus. Femora anteriora ad apicem in margine antico spina 1; intermedia trispinosa; postica spinis 5 : 5. Lobi geniculares femorum posticorum utrinque spinosi.

♀. Ovipositor angustus, parum incurvus. Lamina infra-genitalis elongata, triangularis, compressa, subtus sulcata, apice haud emarginata. (*Brunner v. W.*)

♂. Lamina supra-analis brevis, crassa, pyramidalis, supra margine postico rectangulo, lateribus rugosis, per

carinam separatis. Cerci teretes, breves, apice leviter arcuato, obtuso, unguiculato. Lamina infra-genitalis longiuscula, apice attenuata, profunde acute incisa, limbo incisuræ lamellari, per sulcum delineata lobum furcatum, sublamellarem eam haud superantem imitante. Styli breves, obtusi, subdepressi.

♂. Long. corp. 32; pronot. 6; elytr. 29·5; femor. post. 19 millim.

♀. Long. corp. 33; pronot. 6; elytr. 29; femor. post. 18; ovipos. ? millim.

FIGURE :—Fig. 24, the infra-genital plate of the male, with styli.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

6. **Bliastes fasciatus,** Brunn.

Bliastes fasciatus, Brunn. v. W. Monogr. der Pseudophyll. p. 192.

Hab. COSTA RICA (*Mus. Berol.*).

7. **Bliastes moristoides,** Brunn.

Bliastes moristoides, Brunn. v. W. Monogr. der Pseudophyll. p. 193.

Hab. MEXICO.—ANTILLES, Martinique.

[8. **Bliastes punctifrons,** Stål.

Bliastes punctifrons, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 49 (1873); Recens. Orthopt. 2, p. 91; Brunn. v. W. Monogr. der Pseudophyll. p. 194.

Hab. COLOMBIA, Antioquia.]

PARABLIASTES, Brunner.

Parabliastes, Brunner v. W. Monogr. der Pseudophyll. p. 195.

1. **Parabliastes vermiculatus,** sp. n.

Pallide testaceus, leviter virescens. Antennæ totæ concolores. Frons polita, nitida, crasse sparse punctata, in medio breviter bisulcata, tota pallida. Mandibulæ apice castaneæ. Pronotum dense verruculoso-granulatum, sulcis vermiculatis castaneo-variis ornatum; margine infero loborum lateralium crassissimo, elevato-depresso, nitido, polito. Elytra angusta, pallida, areolis ad venas transversales fuscis; campo marginali minus dense reticulato. Alæ leviter infumatæ. Tibiæ anticæ breviusculæ, latere supero lato, plano, punctato, infra foramina haud lobatæ; conchis convexis, crassis, interna crassiore; basi tibiarum sulco transverso, alteroque interno supra concham castaneo-notatis. Femora antica subtus inermia; intermedia spinis 2; postica 4–5, rufo-castaneis. Lobi geniculares femorum posticorum producti, rotundati; interno spinoso. Tibiæ posticæ extus tantum spinis 3–4, intus spinis 9; spinæ omnes tibiarum castaneæ vel cum basi pallida. Partes anales?

♂. Long. corp. 27; pronot. 6; elytr. 27·5; femor. post. 15 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

We are compelled to place this species in *Parabliastes*, although the anterior tibiæ are not lobate; the other characters, however, are very similar to those of that genus, especially the much opened and thickened shells of the tympana of the anterior tibiæ. Two other species are known from the northern parts of South America.

[STENOTETTIX, Stål.

Stenotettix, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 47; Recens. Orthopt. 2, p. 66; Brunn. v. W. Monogr. der Pseudophyll. p. 198.

1. **Stenotettix macilentus**, Stål.

Stenotettix macilentus, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 50; Recens. Orthopt. 2, p. 66; Brunn. v. W. Monogr. der Pseudophyll. p. 198.

Hab. Colombia, Antioquia.]

COCCONOTUS, Stål.

Cocconotus, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 46 (1873); Recens. Orthopt. 2, p. 65; Brunner v. W. Monogr. der Pseudophyll. p. 198.

Lamina infra-genitalis marium nunc attenuata, nunc haud attenuata.

Synopsis specierum.

a. Tibiæ intermediæ superne muticæ.
b. Femorum spinæ concolores.
c. Frons unicolor, concolor.
d. Verticis rostrum acuminatum.
e. Femora antica 3–4-spinulosa.
f. Femora omnia apicem versus nigrescentia. Cerci ♂ graciles, elongati.—[1. *nigrescens*, Br.]
ff. Femora unicoloria, pallida. Elytra elongata.
g. Corpus normale validum. Femora antica pronoto sesqui-longiora. Ovipositor validus.
h. Elytra unicoloria.—2. *meroncidioides*, Br.
hh. Elytra nigro-conspersa.—8. *pollonerœ*, Gr. (var.).
gg. Corpus gracile. Pedes graciles, valde elongati; femora antica quam pronotum fere duplo longiora. Ovipositor modice latus.
h. Insectum unicolor, fulvo-griseum.—3. *fraternus*, sp. n.
hh. Pronotum supra vitta longitudinali antice angustata albida.—4. *sagittatus*, sp. n.
ee. Femora antica subtus 1–2-spinulosa. Pronotum constrictum, leviter nigro-notatum.—5. *constrictus*, Br.
dd. Verticis rostrum apice minute emarginatum. Tibiæ posticæ margine externo spinis 9 armatæ.—6. *retiarius*, St.
cc. Frons plus minus nigro-notata. Pronotum constrictum.
d. Frons utrinque vitta longitudinali atra ornata. Pronotum sublæve, antice et postice late atro-fasciatum necnon circumcirca atro-limbatum.—7. *globosus*, Br.
dd. Frons nigro-punctata, utrinque macula pallida. Pronotum subtiliter granulosum, antice toto, postice utrinque nigro-limbatum.—8. *pollonerœ*, Griff.
bb. Femorum spinæ totæ vel a basi ultra medium atræ.

c. Frons unicolor, ferruginea. Femora antica subtus 4-spinulosa, postica 6-spinulosa. Pronotum sulcis parum expressis. Elytra unicoloria, testacea. (Statura minore.) —9. *modestus*, Br.

cc. Frons atro-signata.

d. Frons utrinque vitta atra delineata. (Pronotum lobis deflexis ferrugineis. Elytra ferruginea, venulis transversis fusco-circumdatis, campo anali concolore.)—[10. *æthiops*, Br.]

dd. Frons vittis vel maculis nigris 5, in clypeum continuatis ornata.

e. Occiput et pronotum superne nigra.—11. *degeeri*, St.

ee. Occiput et pronotum superne concoloria.

f. Antennæ concolores. Frons vittata.—[12. *aratifrons*, Br.]

ff. Antennæ nigræ. Frons maculis 5 nigris et utrinque in genis vitta nigra ornata. (Femora omnia superne vitta nigra notata.)—[13. *maculifrons*, St.]

aa. Tibiæ intermediæ superne spinulosæ.

b. Spinæ femorum pallidæ, apice infuscato.

c. Colore ferrugineo. Pronotum superne rotundatum, dense et acute granulosum, nigrum. Statura obesa.—[*amorii*, Bol. (Brazil).]

cc. Colore fulvo-griseo. Pronotum superne subplanatum, dense verruculosum, antice et postice transverse nigrum.—[14. *inca*, sp. n.]

bb. Spinæ femorum totæ vel basi nigræ.

c. Caput unicolor vel leviter viridi variegatum. Pronotum totum fusco-ferrugineum.

d. Antennæ totæ nigræ. Frons et campus marginalis elytrorum virides.—[15. *viridi-afflatus*, Br.]

dd. Antennæ fusco-ferrugineæ, haud nigro-variæ.

e. Area mediastina elytrorum basi venulis nonnullis flavis, areolas magnas castaneas includentibus. Statura major.—[*areolatus*, Br. (Peru).]

ee. Area mediastina elytrorum uniformiter dense reticulatus. Tibiæ intermediæ supra spinulis 3–4 armatæ.

f. Pronotum angustum. Elytra irregulariter reticulata et areolis concoloribus ornata. Statura minor.—16. *castus*, Br.

ff. Pronotum amplum. Elytra unicoloria.—[17. *ignobilis*, Br.]

[1. **Cocconotus nigrescens,** Brunn.

Cocconotus nigrescens, Brunn. v. W. Monogr. der Pseudophyll. p. 201.

Hab. COLOMBIA, Medellin.]

2. **Cocconotus meroncidioides,** Brunn.

Cocconotus meroncidioides, Brunn. v. W. Monogr. der Pseudophyll. p. 201.

Hab. MEXICO, Oaxaca (*coll. Brunner*).

Unknown to us.

3. **Cocconotus fraternus,** sp. n.

Statura media, pallide fulvo-griseus. Frons unicolor. Pronotum dense granulosum, margine antico subtuberculato, sulco posteriore vix pone medium sito. Metazona plana, canthis superne leviter expressis; margine postico leviter arcuato. Elytra longa, unicoloria vel ad venas transversales et in campo marginali areolis brunneis notata. Alæ pallide fumosæ. Pedes gracillimi, longissimi. Femora anteriora pronoto duplo longiora, subtus spinulis 4; intermedia subtus spinulis 4; posteriora 7, concoloribus, apice nigris. Tibiæ intermediæ superne muticæ. Abdomen supra segmentis nigro-marginatis, segmento anali nigro, truncato.

♀. Lamina supra-analis late trigonalis. Ovipositor mediocris, rectus, apice supra et infra nigro-marginatus. Lamina infra-genitalis trigonalis, angulatim incisa vel fissa, lobis rotundatis.

♂. Lamina supra-analis rotundato-trigonalis vel parabolica, nigra, ad inferum deflexa. Cerci elongati, teretes, arcuati, dimidia parte apicali graciliores; apice leviter incrassato, subtus breviter nigro-spinoso, supra tuberculum vel lamellam acutam nigram obferens. Lamina infra-genitalis elongata, lateribus compressis, paulum attenuata, rugulosa vel punctulata, sinuato-incisa; stylis mediocribus instructa.

♀. Long. corp. 26; pronot. 7; elytr. 37; femor. post. 23·5; ovipos. 16 millim.

♂. Long. corp. 26·5; pronot. 6; elytr. 32; femor. post. 22 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

In their slender form and long legs this and the following species have somewhat the facies of *Leptotettix*, but their other characters do not accord with those of that genus. Though we have placed them in the synopsis near *C. meroncidioides* and *C. pollonerœ*, they are very different in appearance; moreover, in *C. meroncidioides* the ovipositor is nearly as long as the hind femora, and the infra-genital plate (♀) has a round notch, and in *C. pollonerœ* the ovipositor is stout.

4. **Cocconotus sagittatus,** sp. n. (Tab. XX. fig. 29.)

C. fraterno simillimus; differt ab illo: pronoto sparse minute granulato, tota longitudine vitta lanceolata alba, antice lineari, postice ad latitudinem metazonæ dilatata, ornato. Elytra corporis colore. Abdomen sicut in *C. fraterno* nigro-ornatum.

♂. Long. corp. 25·5; pronot. 6; elytr. 33; femor. post. 21 millim.

FIGURE:—Fig. 29, the apex of the abdomen of the male, from above: *a*, anal segment; *c*, cerci; *s*, supra-anal plate.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Compare with *Leptotettix gigliotosi*, Griff. (*infrà*, p. 439).

5. **Cocconotus constrictus,** Brunn.

Cocconotus constrictus, Brunn. v. W. Monogr. der Pseudophyll. p. 202.

Hab. PANAMA, Chiriqui (*coll. Brunner*).

[6. **Cocconotus retiarius,** Stål.

Cocconotus retiarius, Stål, Recens. Orthopt. 2, p. 90 (1874); Brunn. v. W. Monogr. der Pseudophyll. p. 202.

Hab. COLOMBIA.]

7. **Cocconotus globosus,** Brunn. (Tab. XX. figg. 26–28.)

Cocconotus globosus, Brunn. v. W. Monogr. der Pseudophyll. p. 203, t. 8. fig. 89 (♀).

Major, rufo-testaceus, subtus flavicans. Antennæ fusco-rufæ, secundo articulo supra nigro vel nigro-punctato. Caput validum, anterius et subtus flavidum; cranio vitta nigra, fronteque utrinque vitta nigra variabili ornatis; mandibulæ apice nigræ. Pronotum supra obsolete rugulosum, circumcirca subtiliter nigro-marginatum, supra vitta nigra in medio angustata notatum; sulcis profundis. Elytra concoloria, apice anguste rotundata, frequenter reticulo pallido. Alæ pallide fumosæ. Femora antica et intermedia subtus spinis 3–4, postica 5–6, omnibus concoloribus, armata. Tibiæ anticæ superne infuscatæ, nonnunquam annulo pallido in foraminibus ornatæ; tibiæ intermediæ superne muticæ.

♀. Ovipositor validus, in medio latior, margine supero leviter undato. Lamina supra-analis quadrata. Cerci breves, styliformes, acuti. Lamina infra-genitalis trigonalis, trapezina, rotundatim incisa, ejus lobi spiniformes.

♂. Abdominis segmentum 7^{m} in medio margine *appendicem piriformem* rufum, nitidum *ad anticum reversum gerens* (fig. 27, *a*), per petiolum brevissimum sulco divisum vel quadrituberculatum cum segmento conjunctum. Segmentum anale perpendiculariter planatum vel excavatum, rugosum, longe villosum. Lamina supra-analis elongato-quadrata, villosa, basi foveolata vel tota late sulcata, a segmento anale haud vel tantum per sulcum obsolete separata. Cerci subteretes, basi lati, apice graciles, incurvi, unguiculati, laminam supra-analem parum superantes. Lamina infra-genitalis subparallela, angusta, profunde acutissime incisa, marginibus interioribus incisuræ lamellaribus, per sulcum delineatis, apice infra stylorum basin productis, apice rotundatis. Styli parum longi, valde compressi vel deplanati, longe pilosi, propter processus marginum interiorum laminæ infra-genitalis ante ejus apicem exserti.

Var. Femora antica et intermedia apice leviter fuscescentia.

♀. Long. corp. 43; pronot. 10; elytr. 40; femor. post. 17·5; ovipos. 22 millim.

♂. Long. corp. 41; pronot. 8·5; elytr. 33; femor. post. 24·5 millim.

FIGURES:—Fig. 26, the ovipositor of the female, magnified.—Fig. 27, the apex of the abdomen of the male, magnified: *s*, supra-anal plate; *c*, cercus; *i*, infra-genital plate; *a*, curious appendage of the seventh segment.—Fig. 28, the appendage, magnified.

Hab. MEXICO, Teapa in Tabasco (*Mus. Roy. Belg.; H. H. Smith*), Oaxaca; GUATEMALA (*coll. Brunner*).

This is a very remarkable species: the female has a stout ovipositor; the male has a process arising from the seventh abdominal segment * and the infra-genital plate very peculiarly formed, the inner margin of the latter being produced beyond the base of the styli, so that these are articulated before the apex of the two branches of the infra-genital plate.

8. **Cocconotus polloneræ,** Griff.

Cocconotus polloneræ, Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 22 (1896); xiii. no. 319, p. 3 (1898).

Statura modica. Testaceo-ferrugineus; capite et pronoto supra atris. Antennæ ferrugineo-brunneæ, articulis 2 basalibus anterius maxima ex parte nigro-fuscis. Frons hinc illinc castaneo dilute notata, et utrinque macula sat magna, flavida infra antennas ornata. Epistoma flavum, punctis minimis margineque supero utrinque linea parva nigra notatum. Labrum fuscum, apice testaceum, basi flavidum; mandibulæ et palpi ferrugineo-testacei. Pronotum sat constrictum, sat dense, subargute, granulosum; supra haud

* At first sight the process looks like a parasite or some accidental development; but it is found in all individuals. and even in the male larva. In immature examples it forms only a black wart, which is not yet petiolated nor thrown forwards.

nitidum, sulco postico sensim pone medium sito ; margine antico parum rotundato, tuberculo medio parvo sed acuto prædito ; margine postico rotundato, in medio distincte subsinuato. Lobi laterales testaceo-ferruginei, parum longiores quam altiores, subrectangulares, anterius quam posterius paulo altiores, angulis rotundatis, margine antico et postico nigro. Elytra apicem ovipositoris superantia, sat angustata, primo intuitu testacea, creberrimeque fusco-conspersa et punctata, reticulatione flava, venis longitudinalibus ferrugineis vel testaceis ; campo anali tamen toto fusco. Alæ infumatæ, venis flavidis. Pectus sat compressum, prosterno breviter bispinoso, metasterno foveo unico prædito. Pedes elongati, ferrugineo-testacei, spinis concoloribus ; tibiis femoribusque apicem versus saturatioribus. Femora antica subtus spinis 2–3, intermedia 3, postica 5–6. Tibiæ anticæ et intermediæ supra inermes ; anticæ conchis parum hiantibus.

♀. Lamina supra-analis sat parva, obtuse rotundata, concaviuscula. Ovipositor robustus, latiusculus, margine supero fere recto, a tertia parte basali minute serrulato, testaceus, basi subfuscus, in dimidia parte apicali late saturateque ferrugineo-marginatus, apice acuto. Lamina infra-genitalis compressiuscula, sat parva, subtriangularis, apice tamen obtuse rotundata et apice leviter emarginato.

♀. Long. corp. 36 ; pronot. 7 ; elytr. 47·5 ; femor. post. 28 ; ovipos. 21, lat. max. 3·5 millim.

Hab. PANAMA, Isthmus of Darien.—ECUADOR, Rio Peripa.

C. pollonerœ seems to be closely allied to *C. globosus*, Brunn. In the pale varieties the forehead might have the black marks obliterated, and thus the species would come next to *C. meroncidioides* in the Table.

9. **Cocconotus modestus,** Brunn.

Cocconotus modestus, Brunn. v. W. Monogr. der Pseudophyll. p. 204.

Hab. GUATEMALA (*Mus. Genavense*).

[10. **Cocconotus æthiops,** Brunn.

Cocconotus æthiops, Brunn. v. W. Monogr. der Pseudophyll. p. 205.

Hab. COLOMBIA, Medellin.]

11. **Cocconotus degeeri,** Stål.

Meroncidium degeeri, Stål, Freg. Eug. Resa, Ins. p. 322 (1860).

Cocconotus degeeri, Stål, Recens. Orthopt. 2, p. 89 (1874) ; Brunn. v. W. Monogr. der Pseudophyll. p. 206 ; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 21.

Frons vittis 5 nigris, plus minus confluentibus, fere sicut in *Bliaste camerani*, Griff. Caput supra et pronotum variabiliter nigro-ornata. Elytra basi haud obscuriora, reticulatione pallida, punctis numerosissimis fuscis in coitu venarum notata. Femora anteriora et intermedia subtus spinis nigris 3–5 ; posteriora 6–8. Ovipositor haud nigro-marginatus. Lamina infra-genitalis ♂ valde attenuata *. (Darien, in sylvis, et Punta de Sabana.)

Hab. PANAMA, Volcan de Chiriqui (*Champion*), Punta de Sabana, Isthmus of Darien (*Griffini*), St. Joseph I. (*Stål*).

[12. **Cocconotus aratifrons,** Brunn.

Cocconotus aratifrons, Brunn. v. W. Monogr. der Pseudophyll. p. 206.

Hab. COLOMBIA.]

* Signor Griffini correctly states that the infra-genital plate of the males of the genus *Cocconotus* is attenuated posteriorly in some species, and not at all or but little in others.

[13. **Cocconotus maculifrons,** Brunn.

Cocconotus maculifrons, Brunn. v. W. Monogr. der Pseudophyll. p. 207.

Hab. Colombia, Antioquia.]

[14. **Cocconotus inca,** sp. n.

Validus, griseo-ferrugineus. Caput et antennæ concoloria. Pronotum confertim verruculoso-granosum, supra lobo antico et metazona magna parte nigris; metazona leviter ascendente, postice nonnihil producta, margine arcuato, in medio subinciso. Lobi laterales margine infero crasso, leviter arcuato, angulo postico sensim rotundato, nigro-marginato. Foveola metasterni transversa. Propleuræ magna parte nigræ; mesopleuræ vitta perpendiculari nigra; metapleuræ margine postico late nigro-limbatæ. Elytra unicoloria, sat lata; campo marginali venis costalibus obliquis, numerosis, in $\frac{2}{3}$ parte distali instructo. Alæ infumatæ, venis ferrugineis, amplæ, in extensu elytris æquilongæ. Pedes crassiusculi; spinis concoloribus, apice nigris; femora 1, 2, subtus spinis 3; femora postica brevia ac crassa, subtus spinis longis 6. Lobus genicularis internus femorum intermediorum et posticorum spinosus. Tibiæ intermediæ supra margine postico spinis minutis 2–4; tibiæ posticæ supra spinis 9 : 5.

♀. Lamina supra-analis minuta, rotundata. Cerci arcuati, crassiusculi. Ovipositor femoris longitudine, sat gracilis, rectus, subtiliter striolatus, margine infero et vitta longitudinali media obsoleta castaneis, margine superiore distincte serrulato, apice utrinque tuberculis 6. Lamina infra-genitalis ampla, carinata, cordiformiter incisa, lobis utrinque late rotundatis.

♀. Long. corp. 32; pronot. 8·5; elytr. 40, lat. 11; femor. post. 21 millim.

Hab. Peru.

A very distinct species. It differs from the typical *Cocconoti* in having the pronotum somewhat produced posteriorly, and the infra-genital plate large and broadly bilobed. The pleuræ are ornamented with black, as in the species of the genus *Idiarthron.*]

[15. **Cocconotus viridiafflatus,** Brunn.

Cocconotus viridiafflatus, Brunn. v. W. Monogr. der Pseudophyll. p. 208.

Hab. Colombia.]

16. **Cocconotus castus,** Brunn.

Cocconotus castus, Brunn. v. W. Monogr. der Pseudophyll. p. 210.

Hab. Mexico (*Mus. Genavense*).

[17. **Cocconotus ignobilis,** Brunn.

Cocconotus ignobilis, Brunn. v. W. Monogr. der Pseudophyll. p. 210.

Hab. Colombia; Venezuela.]

THAMNOBATES *, gen. nov.

Corpus et elytra griseo-testacea vel griseo-olivacea. Caput antice plus minus planatum. Verticis rostrum minutum, acuminatum, basi bituberculatum, scrobis antennarum vix æquilongum. Antennarum articulus primus muticus. Pronotum supra rotundatum, dense fortiter granulatum, sulcis binis perspicuis, postico

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* *θάμνος*, vepres, et *βαίνω*, ambulare—which moves in the bushes.

in media longitudine exarato; margine postico leviter arcuato. Lobi laterales margine infero crasso, calloso. Elytra abdomen parum superantia, lanceolata, apice anguste rotundata, tota coriacea, dense punctato-reticulata; vena ulnari anteriore prope apicem marginis postici excurrens. Alæ leviter infumatæ. Prosternum bispinosum. Pedes breves; femora anteriora et intermedia subtus spinis 3–4; postica basi inflata, parte apicali breviter gracili, subtus spinosa. Lobi geniculares omnes mutici. Tibiæ anticæ tetragonæ, supra planæ, foraminibus hiantibus, posticæ supra spinis apicalibus nullis vel una instructæ; tibiæ intermediæ compressæ, supra muticæ.

♀ ♀. Ovipositor gracilis, arcuatus. Lamina infra-genitalis trigonalis.

♂ ♂. Lamina supra-analis trigonalis. Cerci breves, truncati (apice spina transversa armati). Lamina infra-genitalis postice attenuata, stylis instructa. Campus tympanalis elytri sinistri pone venam stridulantem nigro-opacus, ille elytri dextri vitreus. Vena axillaris 2ª venæ stridulante parallela et illi contigua.

This genus comes close to *Cocconotus*. It differs from it in having the tympana of the anterior tibiæ more opened, the femora without spines on the apical lobes, the elytra comparatively short and lanceolate in form, the ovipositor arcuated, and the pronotum rugose, with much thickened lateral edges.

1. **Thamnobates subfalcata,** sp. n. (Tab. XX. figg. 30–32.)

Statura minore, colore fulvo-testacea; capite et pronoto supra rufo-testaceis. Frons lævigata, utrinque infra subcarinata, in medio lineis 2, utrinque linea interrupta vel maculis 2, necnon macula rotundata ad clypeum, fuscis (vel immaculata). Pronotum dense rugoso-granulatum, marginibus lateralibus incrassatis, late callosis. Elytra grisea, acuminata, punctato-reticulata, venis parum prominulis, apice hebetato. Pedes breves, spinis concoloribus, femora antica et intermedia subtus spinis 3; postica vix tertia parte apicali lineari, subtus spinis 6–7. Tibiæ anticæ supra latiusculæ, planæ. Lamina supra-analis parva, trigonalis, impressa.

♀. Ovipositor gracilis, sensim arcuatus, femori postico æquilongus, ad apicem tuberculis 2 (primo lineari, perpendiculari), notatus; margine supero ad apicem vix perspicue crenulato; margine supero et infero dimidia parte apicali fusca, parte intermedia testacea, subtilissime punctulata. Lamina infra-genitalis acuta.

♂. Elytra paulo breviora, apice paulo minus acuta. Cerci teretes, breves, apice extus in dentem excurrentes, intus processum spiniformem perpendicularem præbentes. Lamina infra-genitalis apice angustata, late canaliculata, truncata, minute incisa, cercos haud superans, stylis instructa. (Styli deleti.) Vena stridulans elytri sinistri cylindrica, intus haud acuminata.

♀. Long. corp. 24; pronot. 5·5; elytr. 20; femor. post. 14·5; ovipos. 11 millim.

♂. Long. corp. 20·5; pronot. 5·5; elytr. 17; femor. post. 12 millim.

Figures:—Fig. 30, the female from above, natural size.—Fig. 31, the ovipositor.—Fig. 32, the apex of the abdomen of the male, from above: *a*, anal segment; *c*, cerci; *s*, supra-anal plate.

Hab. Panama, Volcan de Chiriqui (*Champion*).

NANNOTETTIX, Redt.

Nannotettix, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 212.

[1. **Nannotettix elongatus,** Brunn.

Nannotettix elongatus, Brunn. Monogr. der Pseudophyll. p. 214, t. 8. fig. 91 (♀).

Hab. Colombia.]

2. **Nannotettix marginatus,** Brunn. (Tab. XXI. fig. 1.)

Nannotettix marginatus, Brunn. v. W. Monogr. der Pseudophyll. p. 214.

♂. Fulvo-testaceus, unicolor. Pronotum selliforme, dense rugulosum, antice tuberculo minuto instructo;

sulco longitudinali prozonæ et carinula metazonæ percurrentibus; margine postico parum arcuato. Elytra segmenta 2 abdominis tegentia, dense elevato-reticulata, postice rotundata; tympano magno; vena stridulante elytri sinistri crassissima, maxime prominula, rotundata. Femora 1–2 subtus spinulis 2; postica spinis 5, margine inferiore partim nigro; anteriora quam intermedia longiora. Abdomen brunneo-punctatum, segmentis 1–6 tuberculo minuto. Lamina supra-analis magna, rotundato-trapezina. Cerci teretes, breves, subrecti, apice brevissime arcuato, unguiculati, laminam supra-analem haud superantes. Lamina infra-genitalis elongata, basi lata, parte apicali angusta, obtusangulatim incisa, stylis nullis.

♂. Long. corp. 22; pronot. 5; elytr. 7·5; femor. ant. 9; femor. post. 13·5 millim.

Hab. Mexico, Orizaba (*Saussure, in Mus. Genavense*).

3. **Nannotettix vittatus,** Brunn.

Nannotettix vittatus, Brunn. v. W. Monogr. der Pseudophyll. p. 214.

Hab. Mexico (*Mus. Berol.*).

DISCERATUS, Scudd.

Disceratus, Scudder, Proc. Boston Soc. Nat. Hist. xii. p. 335 (1869); Brunn. v. W. Monogr. der Pseudophyll. p. 216.

1. **Disceratus karschi,** Brunn.

Disceratus karschi, Brunn. v. W. Monogr. der Pseudophyll. p. 216, t. 8. fig. 92 (♀).

Hab. Costa Rica (*Mus. Berol.*).

ISCHNOMELA, Stål.

Ischnomela, St Öfv. Vet.-Ak. Förh. xxx. 4, p. 47 (1873); Recens. Orthopt. 2, p. 66; Brunn. v. W. Monogr. der Pseudophyll. p. 217.

1. **Ischnomela gracilis,** Stål. (Tab. XXI. fig. 2.)

Ischnomela gracilis, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 47 (1873); Recens. Orthopt. 2, p. 66; Brunn. v. W. Monogr. der Pseudophyll. p. 218; Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 18 (1896).

Var. Pedes rufo-flavi. Elytra margine suturali pallido.

Hab. Panama, Bugaba (*Champion*), Tintin, Isthmus of Darien (*Griffini*).

[MACROCHITON, Redt.

Macrochiton, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 219.

1. **Macrochiton heros,** Brunn.

Macrochiton heros, Brunn. v. W. Monogr. der Pseudophyll. p. 220, t. 8. fig. 96.

Hab. Colombia.]

CECENTROMENUS, Brunn.

Cecentromenus, Brunn. v. W. Monogr. der Pseudophyll. p. 220.

1. **Cecentromenus marmoratus,** Brunn.

Cecentromenus marmorątus, Brunn. v. W. Monogr. der Pseudophyll. p. 221, t. 8. fig. 97 (♀).

Var. ♀. Frons fusca. Antennæ fuscæ. Pronotum sparse rare granulosum, antice reflexo-marginatum, in medio margine dente armatum; metazona bispinosa, margine postico in angulis et in medio tuberculo notato. Elytra maculis pallidis ellipticis et rotundatis subcontiguis tessellata. Alæ infuscatæ, fasciis pallidis latioribus, irregulariter tessellatæ. Abdominis segmentum penultimum utrinque nigro-nitidum. Ovipositor dimidia parte apicali niger valvisque superioribus basi nigris.

Hab. Panama, Volcan de Chiriqui (*Champion*), Chiriqui (*coll. Dohrn*).

LEPTOTETTIX, Stål.

Leptotettix, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 47 (1873); Recens. Orthopt. 2, p. 66; Brunn. v. W. Monogr. der Pseudophyll. p. 221.

1. **Leptotettix nigronotatus,** Brunn.

Leptotettix nigronotatus, Brunn. v. W. Monogr. der Pseudophyll. p. 224, t. 9. fig. 98 (♂).

Hab. Guatemala (*coll. Dohrn*).—? Colombia.

2. **Leptotettix gigliotosi,** Griff.

Leptotettix gigliotosi, Griffini, Bollett. dei Mus. di Zool. di Torino, xi. no. 232, p. 23 (1896).

Gracilis, testaceo-virescens, hinc illinc breviter obsoleteque pubescens. Caput sat parvum, paullo verticaliter elongatum, pallide flavescens, fronte parum convexa. Oculi transverse suboblique fusco-fasciati, colore fusco lineolam transversam pallidam includente. Verticis rostrum breve, sulcatum, basi utrinque tuberculatum, macula eburnea notatum. Antennæ graciles, basi fere contiguæ, articulo basali mutico, annulis inter se distantibus pallidis ornatæ. Pronotum totum uniformiter pallide testaceum; totum rugulosum, minute granulosum etiam in lobis deflexis; margine antico rotundato, in medio tuberculo minimo prædito, margine postico rotundato-truncato; sulcis binis sat impressis, quorum posticus in medio pronoti exaratus. Lobi laterales longiores quam altiores, fere rectangulares, margine infero recto, angulis rotundatis. Elytra parum coriacea, abdomen in utroque sexu parum superantia, marginibus subparallelis, circiter ut in figura 98 Brunneri confecta et venosa, apice sat rotundata, testaceo-viridia, margine suturali toto vel interrupte flavo-limbato. Alæ infumatæ. Pectus sat angustum; prosternum tuberculis duobus parvis triangularibus sat acutis præditum; metasternum fovea unica parva subovali instructum. Pedes sat longi. Femora supra teretia, lobis genicularibus, excepto lobo interno femorum intermediorum, muticis; apice sæpe utrinque albido-flavo. Femora antica et intermedia subtus 3–5-spinosa, spinis basi apiceque nigris; femora postica, basi incrassata, subtus 6–8-spinosa, spinis maxima ex parte nigris. Tibiæ compressæ, longitudinem femorum parum superantes; anticæ supra planiusculæ, muticæ, conchis sat hiantibus, plus minusve eburneis; intermediæ supra subsulcatæ, muticæ; posticæ multispinosæ. Abdomen testaceo-virescens, segmentis omnibus margine postico sat late (præcipue superne) transverse nigro-fasciato, fasciis in medio latioribus, in latera evanescentibus. Segmento anale supra toto nigrum, apice parum impressum.

♀. Pronotum unicoloria, superne macula flava nulla. Segmentum anale glabrum. Lamina supra-analis nigra, nitida, inflexa, subrotundata. Ovipositor sat brevis et sat robustus, rectus, basi testaceus, apice sæpe fusco-niger, acuminatus, margine supero apice serrulato et basi subsinuato, margine infero basi subconcavo, deinde subconvexo. Lamina infra-genitalis parva, subtriangularis, sat emarginata, lobis rotundatis.

♂. Pronotum superne vitta lata triangulari flava, anterius acuta, marginem posticum utrinque includente. Segmentum anale parum pubescens. Lamina supra-analis inflexa, rotundata, nigra, leviter concavo-depressa. Cerci testacei, valde elongati, subcylindrici, apicem versus subattenuati sed apice ipso dilatato, subclavato; clava compressa, lateribus punctato-subconcava et spinulis duabus apicalibus nigris armata,

quarum supera majore, inflexa. Lamina infra-genitalis elongata, apice tamen, ibique minute et sat crebre transverse rugulosa, utrinque carinata, stylis brevibus pubescentibus instructa; (longitudo stylorum tertiam partem laminæ longitudinem parum superat).

♀. Long. corp. 35–37; pronot. 6·5–7; elytr. 40–41·5; femor. post. 25–27; ovipos. 15·5 millim.

♂. Long. corp. 37; pronot. 7; elytr. 38; femor. post. 24·5 millim.

Hab. PANAMA, Punta de Sabana, &c., Isthmus of Darien.

The male is coloured like *Cocconotus sagittatus* (*anteà*, p. 433), but differs from the corresponding sex of that species in its short styli.

[SEMILEPTOTETTIX, Brunn.

Semileptotettix, Brunn. v. W. Monogr. der Pseudophyll. p. 225.

1. **Semileptotettix pilosus,** Brunn.

Semileptotettix pilosus, Brunn. v. W. Monogr. der Pseudophyll. p. 226 (♀).

Hab. COLOMBIA, Medellin.

2. **Semileptotettix viridifrons,** Brunn.

Semileptotettix viridifrons, Brunn. v. W. Monogr. der Pseudophyll. p. 226 (♀).

Hab. COLOMBIA.]

[TELEUTIAS, Stål.

Teleutias, Stål, Recens. Orthopt. 2, p. 65 (1874); Brunn. v. W. Monogr. der Pseudophyll. p. 228.

1. **Teleutias castaneus,** Brunn.

Teleutias castaneus, Brunn. v. W. Monogr. der Pseudophyll. p. 231 (♂).

Hab. COLOMBIA, Baños.]

EUACRIS *, gen. nov.

Corpus gracile, colore viridi. Verticis rostrum lanceolatum, scroba antennarum vix superans, sulcatum, basi tuberculos compressos 2 minutos, invicem remotos gerens. Articulus primus antennarum superne dentem hebetatam vix prominulam, a margine depresso haud sejunctam obferens. Pronotum supra teres, dense verruculatum; sulcis angustis; sulco postico pone medium exarato; margine postico subarcuato. Lobi laterales longiores quam altiores, margine infero verruculoso-crenato, angulo postico obtusangulo. Elytra longa, angusta, semicoriacea, venis omnibus rectis. Venæ humeralis et discoidalis a basi remotæ, parallelæ, ultra medium divergentes; vena humeralis ante apicem elytri desinens, venas costales remotas emittens; vena mediastina distincta, ramosa, ad quartam partem marginis finem habens. Venæ ulnares binæ subrectæ, apicem elytri fere attingentes, saltem antica. Alæ coloratæ. Prosternum spinis 2 trigonalibus hebetatis armatum. Mesosterni lobi trigonales, breves; metasternum haud lobatum, foramine magno, in forma litteris V retro-impresso. Pedes graciles, longi. Coxæ intermediæ subtus haud tuberculatæ. Femora subtus spinosa; postica gracillima, tota longitudine spinosa; lobi geniculares omnes valde spinosi. Tibiæ anticæ supra sulcatæ; intermediæ supra spinosæ.

♀ ♀. Ovipositor robustissimus, subtus latus, compressus. Lamina infra-genitalis late trigonalis.

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* εὖ, bellè, valdè; ἀκρίς, locusta.—A remarkable locust.

♂ ♂. Cerci teretes, crassi, arcuati, apice acuminati, unguiculati. Lamina infra-genitalis elongata, subtus valde carinata, basi elevato-lamellari-compressa, marginibus superis valde sinuatis; ejus pars posterior in processum angustum producta; stylis foliaceis, lanceolatis, lateralibus.

This genus is somewhat intermediate between the groups Cocconotites and Cyrtophyllites. It must be included in the Cocconotites as it has the intermediate coxæ not tuberculated beneath at the base, and the ulnar vein reaching to the tip of the elytra, but it forms a transition to the Cyrtophyllites by its green colour. In the coloration of the wings *Euacris* is also intermediate between the two groups, the wings being brown, as in the Cocconotites, but with very differently shaped whitish-hyaline markings.

1. **Euacris pictipennis,** sp. n. (Tab. XXI. figg. 3–8.)

Viridis. Statura magna. Antennæ concolores. Pronotum totum verruculoso-scabrum; metazona postice minus granulata; lobis lateralibus margine infero in medio leviter arcuato. Elytra angusta, venis expressis. Vena media longe ante medium oriens; venæ ulnares leviter undatæ; venulæ transversæ paucæ, invicem valde remotæ. Alæ quam latiores paulo longiores, disco toto (basi excepta) fusco, campo anteriore et limbo toto, externo, postico, et interno latiuscule albido-hyalino; campo intermedio plus minus luteo-tessellato, necnon campo anteriore maculis nonnullis fuscis ornato. Femora anteriora et intermedia subtus spinis 7; postica multispinosa, basi tantum inermia. Tibiæ intermediæ margine postico spinis 4–5.

♀. Ovipositor rectus, in dimidia parte apicali fusco-rufus, vitta longitudinali viridi; valvis superioribus superne obsolete granulosis, inferne tuberculis nonnullis instructis; margo inferior parum arcuatus, superior in medio leviter subangulatus.

♂. Segmentum anale transversum, in processum minutum quadratum productum. Cerci crassi, teretes, apice arcuato, attenuato, depresso, subtus excavato, in unguiculum acutum nigrum terminato. Lamina infra-genitalis (figg. 6, 7) miraculosa, vix describenda: basi valde compressa, elevato-lamellari-carinata, apice planata, inter stylos producta, rotundata, apiceque in processum angustum excurrens; hic apice trigonali-dilatatus, truncatus; *subtus* ante processum terminalem insuper processum alterum in forma floris quadripetalæ gerens (figg. 7, 8). Styli (fig. 6, *i*) in medio margine laterali laminæ infra-genitalis exserti, maxime foliacei, basi lati, acutissime lanceolati.

♀. Long. corp. 41; pronot. 10; elytr. 52, lat. 11; femor. post. 38; ovipos. 23 millim.

♂. Long. corp. 37; pronot. 9·5; elytr. 50·5, lat. 10; femor. post. 34·5 millim.

FIGURES:—Fig. 3, the female insect.—Fig. 4, the ovipositor, magnified.—Fig. 5, the apex of the abdomen of the male, from above: *s*, supra-anal plate; *c*, cerci.—Fig. 6, the infra-genital plate, from beneath: *i*, its basal part, much carinated (comp. fig. 7, *i*); *e*, its second depressed part; *d*, its apical termination; *f*, its cruciform inferior process (comp. figg. 7, *f*, and 8); *c*, styli.—Fig. 7, ditto, in profile, with the same letters: *u*, the last two ventral segments.—Fig. 8, the corneous appendage (*f*) terminating the inferior subapical process, from beneath, much magnified.

Hab. COSTA RICA, Volcan de Irazu, 7000 feet (*Rogers*).

The male insect is distinguishable by the extraordinary structure of the anal pieces and cerci (comp. figg. 5–8), which are completely different in form from those of any known species of Locustidæ. It will be noticed that the infra-genital plate bears on the underside, near the tip, a small additional process, which, seen from beneath, expands in the form of a Maltese cross:

Group **CYRTOPHYLLITES.**

Cyrtophylli, Brunner v. W. Monographie der Pseudophylliden, p. 233.

SCOPIORUS, Stål.

Scopiorus, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 45 (1873) ; Recens. Orthopt. 2, p. 58 ; Brunner v. W. Monogr. der Pseudophyll. p. 234.

Synopsis specierum, secundum Brunn. v. W.

a. Elytra sensim quadruplo longiora quam latiora. Tibiæ intermediæ superne inermes.
b. Elytra vix quadruplo longiora. Femora spinis atris et basi atro-circumdatis armata; intermedia et postica tantum ad apicem unispinulosa ; posticorum lobi geniculares obtusi. Femora postica subtus trispinulosa.—1. *nigridens,* St.
bb. Elytra quadruplo longiora. Femora spinis concoloribus armata.
c. Pronoti canthi nulli. Elytra ♂ quadruplo longiora. Femora postica lobis genicularibus obtusis.—2. *mucronatus,* sp. n.
cc. Pronoti canthi acuti. Elytra ♂ plus quadruplo longiora. Femorum lobi geniculares omnes mucronati.—3. *carinulatus,* sp. n.
aa. Elytra duplo parum longiora quam latiora. Femora spinis pallidis vel infuscatis, basi haud atro-circumdatis, armata, intermedia et postica subtus pluries spinulosa.
b. Femora antica subtus tantum in margine antico spinulosa. Femora postica subtus 5- ad 10-spinulosa. (Elytra ovata.)
c. Tibiæ intermediæ superne in margine postico spinulosæ.
d. Femora omnia lobis genicularibus spinosis. Femora postica subtus 9- ad 10-spinulosa.
e. Tibiæ intermediæ superne in margine postico 5-spinulosæ.—4. *brevifolius,* Br.
ee. Tibiæ intermediæ superne in margine postico 2-spinulosæ.—5. *reticulatus,* Br.
dd. Femora lobis genicularibus obtusis, exceptis intermediis internis. (Femora postica subtus 5-spinulosa. Tibiæ intermediæ superne bispinulosæ.)—6. *nigro-striolatus,* Br.
cc. Tibiæ intermediæ superne muticæ vel unispinulosæ. (Femora lobis genicularibus spinosis.)
d. Elytra ovata, quam latiora sesqui haud longiora.—7. *muticus,* Br.
dd. Elytra lanceolata, quam latiora triplo longiora.—8. *lancifolius,* Br.
bb. Femora antica subtus in utroque margine spinulosa. Femora postica subtus raro-spinulosa. (Lobi geniculares obtusi. Tibiæ intermediæ superne muticæ.)
c. Statura minore.—[9. *sutorius,* St.]
cc. Statura majore. (Spinulæ femorum apice nigræ.)—[*latifolius,* Br. (Amazons).]

1. **Scopiorus nigridens,** Stål. (Tab. XXI. figg. 9–12.)

Scopiorus nigridens, Stål, Obs. Orthopt. 1 (Bih. till Svenska Vet.-Ak. Handl. iii.), p. 37 (1875) ; Brunn. v. W. Monogr. der Pseudophyll. p. 235.

Læte viridis. Verticis rostrum acutum, sulcatum. Pronotum rugulosum, margine medio antico nigro ; sulco antico parum impresso, postico magis impresso, maculis majusculis nigris supra 3, lateraliter frequenter 1 ;

metazona quam prozona brevior, postice arcuata, subobtusangula, angulo nigro-tuberculato. Elytra lanceolata, angusta, apice rotundata; campus marginalis dense irregulariter reticulatus, venis costalibus obliquis, distinctis præditus; vena mediastina distincta. Alæ subhyalinæ, venis viridibus, quam elytra in requiete paulum, in extensu sensim, breviores. Lobi mesosterni breviter triangulares, metasternum pentagonale, lobis minutis per foramen separatis. Femora anteriora subtus spinis 5–7; intermedia 1–2; postica 5; spinæ omnes nigræ, basi nigro-circumdatæ. Tibiæ anticæ punctis nigris 2, utrinque 1 vel 2 in apicem concharum positis; intermediæ superne muticæ vel in margine postico obsolete 5-dentatæ.

♀. Lamina supra-analis convexa, lata; ejus dimidia pars postica dimidio angustior, quadrata, a parte basali per sulcum arcuatum sejuncta. Ovipositor brevis, longitudine femorum anteriorum, angustus, falcatus, præcipue in medio incurvus, margine supero remote serrulato; valvæ superiores tuberculis confertis in seriem arcuatam ordinatis, linea suturali, margine supero et arcu tuberculorum, fusco-rufis. Lamina infra-genitalis elongata, acute incisa, anguste trigonali-bilobata.

♂. Elytra angustiora; campi tympanalis sinistri vena stridulante crassissima, speculo oblique piriformi. Lamina supra-analis grandis, convexa, subcompressa; ejus pars apicalis subito anguste producta, postice attenuata, apice fissa vel minute incisa, in ramis 2 brevibus contiguis obtusiusculis finem habens. Cerci laminam supra-analem superantes, basi dilatati, dehinc breviter graciles, apice leviter arcuato, unguiculato. Lamina infra-genitalis elongata, a medio valde angustata, laminam supra-analem superans, arcuata, subtus tota longitudine canaliculata, apice anguste incisa, in ramos 2 hebetatos, supra minute nigro-unguiculatos excurrens; stylis nullis.

Var. Tibiæ intermediæ supra margine interno plerumque spinuloso.

♀. Long. corp. 30; pronot. 5·5; elytr. 28, lat. 7; femor. post. 20; ovipos. 8 millim.

♂. Long. corp. 33; pronot. 5; elytr. 30, lat. 5·5; femor. post. 21·5 millim.

Figures:—Fig. 9, the male insect.—Fig. 10, the apex of the abdomen of the male, magnified: *s*, supra-anal plate; *p*, its apical process; *c*, cercus; *i*, infra-genital plate.—Fig. 11, the apex of the abdomen of the female, magnified.—Fig. 12, an elytron of the female.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*), Chiriqui (*Brunner*).

2. **Scopiorus mucronatus,** sp. n. (Tab. XXI. fig. 15.)

Viridis. Antennæ crassiusculæ, remote nigro-annulatæ, annulis primis distinctis, annulis apicalibus obsoletis, primo articulo superne distincte extus mucronato. Verticis rostrum cuneiforme, sulcatum, scrobicula antennarum superans. Frons nitida, utrinque subcarinata. Caput et pronotum linea dorsali nigra ornata; pronotum supra teres, haud dense punctatum, margine postico obtusissime subangulato; lobis lateralibus quadratis, margine infero horizontali. Elytra lanceolata, quam lata triplo longiora (margine suturali nigrescente); campo marginali basi irregulariter reticulato, dehinc venis obliquis parallelis instructo. Alæ subhyalinæ, venis viridibus. Mesosternum basi utrinque spinosum, lobis brevissime acuminatis; metasternum foramine unico, lobis in medio mucronatis. Femora anteriora subtus spinulis 3–4; intermedia apice 2–3; postica apice 3–4; lobi geniculares omnes rotundati vel lobi interni femorum intermediorum acuti. Tibiæ intermediæ supra muticæ.

♂. Segmentum anale supra impressum; lamina supra-analis maxima, segmentum grandem imitans, planata, apice in processum quadratum producta. Cerci apice mucronato, leviter incurvo. Lamina infra-genitalis longe anguste producta, subtus sulcata, apice nonnihil dilatata, transverse sinuata; stylis nullis.

♂. Long. corp. 21·5; pronot. 4; elytr. 21, lat. 5·5; femor. post. 15·5 millim.

Figure:—Fig. 15, an elytron of the male.

Hab. Costa Rica, Azahar de Cartago (*Biolley*).

3. **Scopiorus carinulatus,** sp. n. (Tab. XXI. fig. 14.)

Viridis. Antennæ unicolores, primo articulo extus apice minime dentato. Caput illo *S. mucronati* conforme. Pronotum supra planum, vix angulatum, sulcis angustis, margine antico transverso, postico transverse arcuato. Prozona in medio carinulata; canthi laterales acuti, carinulati; carinæ tamen inter sulcos interruptæ; lobi laterales anterius paulo attenuati. Elytra translucida, anguste lanceolata, quam lata

quadruplo longiora, venis distincte expressis, areolis haud dense reticulatis, campus marginalis venis costalibus parallelis instructus. Alæ breves, subhyalinæ; venis campi analis crassis; venulis transversis marginis antici perpendicularibus. Lobi sternales trigonales; metasterni foramen longitudinale. Pedes gracillimi; femora anteriora subtus spinulis minimis 3–4; intermedia 1; postica apice 3 armata; lobi geniculares omnes mucronati. Tibiæ intermediæ superne muticæ.

♂. Segmentum anale transversum, ejus processus quadratus, apice incisus, lobos trigonales obtusos setosos formans. Cerci apice incurvi, acuti. Lamina infra-genitalis elongata, angusta basi sulcata, in medio leviter angustata, apice anguste profunde incisa, in ramos 2 depressos excurrens. Styli rudimentarii, unguiculiformes, nigri. Tympanum elytri sinistri speculo piriformi, crassiusculo, latiusculo instructo.

♂. Long. corp. 19; pronot. 4; elytr. 21, lat. 4; femor. post. 16·5 millim.

FIGURE:—Fig. 14, an elytron of the male, magnified.

Hab. COSTA RICA, Rio Sucio (*Rogers*).

4. **Scopiorus brevifolius,** Brunn.

Scopiorus brevifolius, Brunn. v. W. Monogr. der Pseudophyll. p. 236, t. 9. fig. 103 (♂).

♂. Viridis. Elytra ovato-lanceolata, margine costali subrecto, margine suturali arcuato, tympani sinistr speculum latum, valde depressum, margine antico transverso, margine postico parabolico. Segmentum anale transversum, lævigatum; ejus processus ab illo per sulcum sejunctus, late quadratus. Cerci breves, apice leviter curvato, unguiculato. Lamina infra-genitalis illæ *S. nigridentis* similis, sed apice haud incisa, stylis minimis instructa.

♂. Long. corp. 22·5; pronot. 5; elytr. 21·5, lat. 18·5; femor. post. 22 millim.

Hab. MEXICO (*coll. Brunner*), Orizaba (*H. H. Smith*).

The above diagnosis will supplement the original description, the Orizaba specimen being a little larger than the type and also presenting some other slight differences.

5. **Scopiorus reticulatus,** Brunn.

Scopiorus reticulatus, Brunn. v. W. Monogr. der Pseudophyll. p. 236 (♂).

Hab. MEXICO (*Mus. Genavense*).

6. **Scopiorus nigro-striolatus,** Brunn.

Scopiorus nigro-striolatus, Brunn. v. W. Monogr. der Pseudophyll. p. 236 (♀).

Hab. MEXICO, Jalapa (*Mus. Hamb.*); GUATEMALA (*coll. Brunner*).

7. **Scopiorus muticus,** Brunn.

Scopiorus muticus, Brunn. v. W. Monogr. der Pseudophyll. p. 237 (♀).

Hab. PANAMA, Chiriqui (*coll. Dohrn*).

8. **Scopiorus lancifolius,** Brunn. (Tab. XXI. fig. 13.)

Scopiorus lancifolius, Brunn. v. W. Monogr. der Pseudophyll. p. 237.

Pronotum in longitudinem carinatum, rugulosum vel ♀ parce granosum, ♂ supra opaco-lævigatum. Elytra acuminata. Alæ hyalinæ, apice rotundato-truncato, in extensu elytris valde breviores. Cerci recti, acuti. Lamina supra-analis transversa, compressa, angulatim incisa, in processum attenuatum producta.

♀. Processus laminæ supra-analis elongatus, basi per sulcum sejunctus. Ovipositor falcatus, quam in *S. nigridente* longior, minus arcuatus, totus viridis ac lævigatus, margine superiore haud crenulato.

♂. Processus laminæ supra-analis apice trigonali-incisus. Lamina infra-genitalis ultra medium attenuata, marginibus superis valde sinuatis, apice profunde incisa, stylis brevissimis, instructa.

Figure:—Fig. 13, an elytron of the female, magnified.

Hab. Panama, Bugaba (*Champion*), Chiriqui (*Brunner*).

[9. **Scopiorus sutorius,** Stål.

Scopiorus sutorius, Stål, Öfv. Vet.-Ak. Förh. xxx. 4, p. 45; Recens. Orthopt. 2, p. 74; Brunn. v. W. Monogr. der Pseudophyll. p. 237 (♂).

Hab. Colombia, Antioquia.]

CALOXIPHUS *, gen. nov.

Statura parva, colore fulvo vel virescente (viridis?). Antennarum articulus basalis in margine superiore dente brevi instructus. Verticis rostrum triangulare, sulcatum, scrobicula antennarum leviter superans. Pronotum supra rotundatum, dense rugose crasse punctatum, sulcis ambobus impressis; margine postico complete truncato, a marginibus posticis loborum lateralium ad humeros utrinque leviter superato. Elytra abdomen haud superantia, latiuscula, lanceolata, apice anguste rotundata, coriacea, venis expressis; vena ulnari antica ultra medium marginem suturalem finem habens. Alæ subhyalinæ, venis virescentibus. Lobi meso- et metasternales haud producti; lobi metasternales tamen dentem apicalem minutum præbentes; foveolæ metasternales binæ ad unam confusæ. Pedes graciles. Coxæ intermediæ subtus bituberculatæ. Femora subtus planata, spinis paucis armata; femora postica dimidia parte apicali lineari. Tibiæ 1, 2 superne sulcatæ et supra inermes, spinis apicalibus nullis; anticæ foraminibus hiantibus; posticæ multispinosæ, spinis apicalibus nullis.

♀ ♀. Lamina supra-analis producta. Cerci subarcuati, obtusiusculi. Ovipositor gracilis, falcatus, concolor, tuberculis et carinulis castaneis ornatus. Lamina infra-genitalis lata, minute incisa, lobis apicalibus minutis, rotundatis.

This genus must be placed in the Cyrtophyllites, on account of the intermediate coxæ being bituberculate beneath. It is allied to *Scopiorus*.

1. **Caloxiphus championi,** sp. n. (*Calloxiphus championi*, Tab. XXI. figg. 16,17.)

Crassiusculus, totus virescens. Caput lævigatum. Frons plana, utrinque carinata. Verticis rostrum trigonale, excavatum. Antennæ nigro-annulatæ, annulis nigris invicem remotis, primis distinctis, sequentibus obsoletis. Pronotum crassissime rugose reticulato-punctatum, margine postico subrecto, anguste nigro. Elytra coriacea, abdomine paulo breviora, dense reticulato-punctata, campo marginali obsolete venoso, dimidia parte apicali venis costalibus obliquis 4–5. Alæ in quiete elytris æquilongæ, subhyalinæ, venis virescentibus. Femora antica et intermedia subtus spinis 2; postica spinis 4; spinæ femorum et tibiarum subtus apice nigræ et basi nigro-circumdatæ. Tibiæ anticæ ad apicem valvorum foraminum macula nigra; tibiæ posticæ supra multispinosæ, spinis concoloribus, apice nigris.

♀. Lamina supra-analis carinata, in processum longum, angustum, truncatum, cercos leviter superantem, producta. Ovipositor brevis, gracilis, concolor, valde arcuatus et acutus; ejus valvæ superiores supra tuberculis vel punctis castaneis 8–10 in seriem ordinatis instructæ; his tuberculis per lineas castaneas cum margine supero conjunctis; pars media insuper infra seriem tuberculorum carinulas 5 transversas castaneas obferens. Lamina infra-genitalis anguste incisa.

♀. Long. corp. 25; pronot. 5; elytr. 18·5; femor. post. 15·5; ovipos. 8 millim.

Figures:—Fig. 16, the female insect.—Fig. 17, the tip of the abdomen and the ovipositor, magnified.

Hab. Guatemala, Panzos in Vera Paz (*Champion*).

* καλός, venustus; ξίφος, ensis.—With a beautiful ovipositor.

DIOPHANES, Stål.

Diophanes, Stål. Obs. Orthopt. 1 (Bih. till Svenska Vet.-Ak. Handl. iii.), p. 38 (1875); Brunner v. W. Monogr. der Pseudophyll. p. 241.

One of the new species which we describe below, *D. rex*, does not quite accord with Brunner's diagnosis of *Diophanes*. It is necessary therefore to modify somewhat the published description of the genus by including the characters mentioned in the second group (*aa*) of the following synopsis.

Synopsis specierum.

a. Lobi geniculares femorum anteriorum obtusi; illi femorum intermediorum spina interna armati. Tibiæ intermediæ superne spinulosæ.

b. Vena humeralis in dimidia parte distali a vena discoidali divergens; vena media ante medium oriens. Alæ roseæ; styli ♂ longi.

c. Alæ venuste roseæ. Ovipositor gracilis.—1. *perspicillatus*, Fabr.

cc. Alæ hyalino-rosescentes. Ovipositor latissimus.—2. *rosescens*, sp. n.

bb. Vena humeralis cum vena discoidali longe contigua, apice subito deflexa.

c. Spinæ femorum concolores, apice fusco.

d. Sat magna. Metazona pronoti ♂ plana. Elytrorum vena media ♂ ultra medium oriens; campus tympanalis atro-limbatus. Alæ albidæ.—[*atrosignatus*, Br. (Bolivia).]

dd. Minor. Metazona pronoti ♂ ascendens. Elytrorum vena media ♂ ante medium oriens; campus tympanalis pallide limbatus. Styli brevissimi.—3. *abbreviatus*, Br.

cc. Spinæ femorum basi late nigræ, apice pallidiore. Elytrorum vena media in quarta parte apicali oriens. Alæ infumatæ. Ovipositor gracilis.—[*nigro-spinosus*, Br. (Peru).]

aa. Lobi geniculares femorum omnium minute spinosi vel antici tantum trigonales. Tibiæ intermediæ supra inermes. Alæ infuscatæ.—[4. *rex*, sp. n.]

1. **Diophanes perspicillatus**, Fabr. (Tab. XXI. fig. 18.)

La Sauterelle à feuilles de Buis et ailes pourprées, Stoll, Représ. des Sauter. etc. p. 17, t. 7 *a*. figg. 23 (♀), 24 (♂) (1793).

Locusta perspicillata, Fabr. Ent. Syst. ii. p. 36 (1793).

Platyphyllum perspicillatum, Serv. Hist. Nat. des Orthopt. p. 445 (1839).

Diophanes perspicillatus, Brunn. v. W. Monogr. der Pseudophyll. p. 242, t. 9. fig. 105*.

Locusta salvifolia, Lichtenst. Trans. Linn. Soc. iv. p. 58, t. 5 (♂ ♀) (1796).

Platyphyllum salvifolium, Brullé, Hist. Nat. des Ins. x. p. 139.

Diophanes rosaceus, Stål, Ob . Orthopt. 1, p. 39 (1875).

Ovipositor gracilis, quam in *D. rosescente* valde angustior (comp. fig. 20).

Var. *a*. Alæ haud pallide marginatæ.—*b*. Alæ in areolis pallide maculosæ.—*c*. In desiccatis alæ partim vel totæ decolores.

FIGURE:—Fig. 18, the ovipositor of the female.

Hab. MEXICO (*Mus. Paris*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*), Chiriqui (*coll. Brunner*).—GUIANA, Paramaribo; AMAZONS; BOLIVIA.

* Not fig. 109.

2. **Diophanes rosescens,** sp. n. (Tab. XXI. figg. 19, 20.)

Læte viridis. Statura magna. Pronotum rugulosum margine postico leviter arcuato; metazona haud ascendente; lobis lateralibus latioribus. Elytra apicem versus attenuata, apice parabolice rotundata. Venæ humeralis et discoidalis in dimidia parte distali divergentes; vena media ante medium oriens. Alæ pallide rosescentes, margine apicali arcuato, haud sensim truncato. Femora postica subtus spinis 9–13 apice nigris armata. Tibiæ intermediæ superne spinis 4–5.

♀. Lamina supra-analis longior quam latior, apice incisa, angulis acutis. Ovipositor validus, latus, rectus (margine supero recto). Lamina infra-genitalis late trigonalis, apice lanceolato-producta.

♂. Lamina supra-analis elongato-triangularis, rotundato-sulcata, valde pubescens, apice truncata vel subincisa. Cerci teretes, crassiusculi, apice obtusi. Lamina infra-genitalis compressa, frequenter sulcata, postice attenuata, incisa; stylis longis, subtus sulcatis, apice haud attenuatis, rotundatis, instructa. Elytrorum tympanum sinistrum speculo minore; dextrum speculo magno, rotundato-quadrato.

♀. Long. corp. 53; pronot. 10; elytr. 63, lat. 19; femor. post. 41; ovipos. 29 millim.

♂. Long. corp. 50; pronot. 9; elytr. 51·5, lat. 15; femor. post. 34·5 millim.

Figures:—Fig. 19, the ovipositor of the female.—Fig. 20, the apex of the abdomen of the male, from beneath: *i*, infra-genital plate; *a*, styli; *c*, cerci.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Closely allied to *D. perspicillatus*, Stoll, but with paler wings, these being of a pale transparent rose-colour, and also differing from that species in having a stout and straight ovipositor (comp. fig. 18).

3. **Diophanes abbreviatus,** Brunn.

Diophanes abbreviatus, Brunn. v. W. Monogr. der Pseudophyll. p. 243 (♂).

Hab. Mexico, Jalapa (*Mus. Hamb.*).

Unknown to us.

[4. **Diophanes rex,** sp. n. (Tab. XXI. figg. 21, 22, 23.)

Magnus, viridis. Antennæ rufæ, articulis 1, 2 viridibus. Verticis rostrum trigonale, leviter sulcatum. Pronotum inæquale; margine antico subtuberculato, postico leviter producto, arcuato; sulcis irregulariter nigro-maculosis; postico profunde impresso paulum pone medium exarato; antico supra in medio tenui, utrinque lato; mesozona utrinque nigro-striolata, crasse punctata; metazona leviter ascendente, basi utrinque impressionibus nigris notata. Lobi laterales margine crasso, angulo postico valde obtusangulo. Elytra sat longa, elongato-elliptica, subcoriacea, dense reticulata, areolis minutis translucidis; margine antico arcuato, postico subrecto. Campus marginalis venis costalibus obliquis furcatis numerosis instructus. Vena humeralis longe ante medium a vena discoidali divergens; vena media ante medium venæ discoidalis oriens. Vena ulnaris anterior recta, ante apicem marginis suturalis desinens; vena ulnaris postica recta, ante medium marginem exeuns. Alæ amplæ, infuscato-subpurpurescentes, translucidæ, venis longitudinalis ferrugineis. Prosternum spinis validis 2 obtusis, longissimis cylindricis, basi propinquis, armatum. Meso- et metasternum lobis trigonalibus erectis, crassis instructa; foveolæ metasternales invicem propinquæ, postice confluentes. Pedes validi. Femora omnia lobis geniculariibus minute spinosis; anteriora subtus spinis 4; intermedia 6, supra mutica; posteriora spinis 12, apice nigris. Tibiæ anteriores foraminibus linearibus; posteriores utrinque valde spinosæ.

♀. Lamina supra-analis late rotundato-trigonalis. Ovipositor angustus, subarcuatus, quam pronotum vix duplo longior, apice marginibus infuscatis, tuberculis nullis scaber. Lamina infra-genitalis crasse carinata, apice trigonali-lobata.

♂. Segmentum anale postice declivi-planatum, pubescens, margine postico medio in processum minutum truncatum, bilobatum, sulcatum, apice nigrum productum. Cerci crassi, arcuati, apice leviter dilatati,

truncati, unguiculo spiniformi in angulo interno armati, angulo externo tuberculato vel inermi. Lamina infra-genitalis (fig. 23) modice longa, basi carinata, apice attenuata, profunde plicata (vel incisa?). Styli (*i*) longissimi, basi teretes, dehinc compressi, supra canaliculati, marginibus acutis, apice leviter dilatati (sinister in processum angustiorem deplanatum excurrens).—Tympanum elytri sinistri corneum, speculo semimembranaceo; illud elytri dextri coriaceum, speculo membranaceo maximo rotundato-quadrato instructum.

Var. Color (in desiccatis) totus mortuifolius.

♀. Long. corp. 51; pronot. 13; elytr. 69, lat. 21; femor. post. 42·5; ovipos. 24 millim.

♂. Long. corp. 48; pronot. 12; elytr. 59·5, lat. 18; femor. post. 38 millim.

FIGURES:—Fig. 21, an elytron of the female.—Fig. 22, the ovipositor.—Fig. 23, the apex of the abdomen from above: *a*, anal segment; *c*, cerci; *i*, infra-genital plate; *o*, styli.

Hab. ANTILLES, Martinique (*Mus. Genavense*).]

XESTOPTERA, Redt.

Xestoptera, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 244 (1895).

1. **Xestoptera cornea**, Brunn.

Xestoptera cornea, Brunn. Monogr. der Pseudophyll. p. 244.

Hab. MEXICO, Oaxaca (*coll. Brunner*).

Unknown to us.

[2. **Xestoptera cincta**, Brunn.

Xestoptera cincta, Brunn. v. W. Monogr. der Pseudophyll. p. 244.

Hab. COLOMBIA, Medellin.]

LOPHASPIS, Redt.

Lophaspis, Redtenbacher, in Brunner v. Wattenwyl's Monogr. der Pseudophyll. p. 244 (1895).

Lobi geniculares antici rotundati vel leviter trigonales, haud spinosi, illi femorum reliquorum utrinque spinosi.

1. **Lophaspis scabriuscula**, Brunn. (Tab. XXI. fig. 24.)

Lophaspis scabriuscula, Brunn. v. W. Monogr. der Pseudophyll. p. 245, t. 9. fig. 107 (♀).

Viridis. Verticis rostrum triangulare, sulcatum. Pronotum totum rugulosum, carinatum, margine antico angulato, postico subangulato; sulco postico profundo leviter pone medium sito, antico minus profundo; binis carinam secantibus. Lobi laterales valde altiores quam latiores, infere quadrati. Elytra densissime punctato-reticulata, apicem versus leviter dilatata, apice rotundata; vena mediastina ramosa, vena humeralis in quarta parte apicali a vena discoidali divergens, venas costales 4–6 emittens. Campus discoidalis in areas oblique quadratas divisus. Alæ quam elytra parum breviora, vena ulnari valde ad anticum curvata. Meso- et metasternum antice lobis 2 trigonalibus acutis erectisque instructa. Femora antica subtus spinulis 4–5; intermedia 5–6; postica tota longitudine spinosa. Lobi geniculares omnes triangulares. Tibiæ intermediæ 5-spinosæ.

♀. Lamina supra-analis elongata, apice rotundata. Ovipositor arcuatus, lævigatus, apice acutus. Lamina infra-genitalis sulcata, rotundato-bilobata.

♂. Feminæ simillima. Lamina supra-analis elongato-trigonalis, apice rotundata, cercis subæquilonga.

Cerci recti, crassi, cylindrici, apice brevissime intus sinuati, minute unguiculati. Lamina infra-genitalis basi carinata, compressa, cercos superans, plusquam dimidia parte apicali angustissima, parallela, apice subtus sulcata, truncata, stylis teretibus, longiusculis instructa. Elytrorum tympana bina speculo magno membranaceo instructa.

♀. Long. corp. 40; pronot. 8·5; elytr. 45, lat. 19; femor. post. 27; ovipos. 18 millim.

♂. Long. corp. 43·5; pronot. 8; elytr. 38, lat. 16; femor. post. 24 millim.

FIGURE.—Fig. 24, the male insect, partim.

Hab. PANAMA, Volcan de Chiriqui 2000–3000 feet (*Champion*), Chiriqui (*coll. Brunner*).

In its general facies this insect somewhat resembles the genus *Dysmorpha*, of the Phaneropterinæ.

Group **PTEROCHROZITES.**

Pterochrozæ, Brunner v. W. Monogr. der Pseudophyll. p. 245.

The species of this group are all extraordinarily mimetic. Their elytra are flat, folding together perpendicularly in repose, and coloured exactly like the leaves of trees or bushes. Some are green, imitating living leaves; others have their elytra tinted with yellow or reddish, like leaves which are beginning to take the autumn tints; others, again, are brown, like dead leaves. In these latter the mimetic resemblance is carried still further, the elytra being often marked with brown dots and pale plagæ, just like leaves in various stages of decay, so that no two specimens are exactly alike. Moreover, in these sham dead leaves there are often transparent spots, imitating the holes made by insects: in the males of some genera (*Mimetica* and *Typophyllum*) the margins of the elytra are crenulated and notched, as if gnawed by caterpillars. Some of these apparent accidents are characteristic of the species, especially the crenulation of the margins of the elytra and the transparent spots.

The most important of such spots are placed beyond the middle of the discoidal field, and, although somewhat variable, they constitute specific markings; others are sometimes spread over the elytra, in quite irregular positions, and must be regarded as purely mimetic, without fixity, and not specific.

In the green forms the elytra are generally entire, imitating living leaves, neither altered in their colour nor attacked by insects.

The identification of the species can scarcely be made with certainty without accurate figures of the elytra.

TANUSIA, Stål.

Tanusia, Stål, Recens. Orthopt. 2, p. 57 (1874); Brunner v. W. Monogr. der Pseudophyll. p. 247.

The two species here described differ from the typical *Tanusiæ* in having the hind wings less transparent, almost dull ochraceous, and destitute of the apical ocellus; but it is not advisable to separate them generically.

Synopsis specierum.

a. Alæ apice venuste ocellatæ. (Species Amer. merid.)

aa. Alæ leviter opacæ, ocello nullo. (Species Amer. centr.)

b. Elytra quam latiora haud duplo longiora, margine antico fortius undato; punctis hyalinis minimis notata.—1. *hægei*, sp. n.

bb. Elytra quam latiora plus duplo longiora, margine antico minus undato, macula hyalina semilunari notata.—2. *ochracea*, sp. n.

1. **Tanusia hœgei**, sp. n. (Tab. XXII. fig. 1.)

Viridi-ochracea (viridis?). Pronotum supra angustum, antice attenuatum, maculis fuscis minutis granulisque fortioribus conspersum. Elytra apice angulata, campo discoidali quam campus marginalis paulo latiore. Campus marginalis ante medium dilatatus, margine valde arcuato, basi subsinuato ac in dimidia parte distali bisinuato; areis inter venas costales venis transversis subtilissimis obsoletis divisis. Margo posterior elytri magna parte vix arcuatus, ultra medium oblique truncatus, subarcuatus. Campus marginalis basi macula transversa et in medio macula trigonali rufescentibus vel vinosis: campus discoidalis maculis ejusdem coloris 2 notatus: prima in medio transversa, secunda externa, obliqua, binis marginem posticum late liberantibus, necnon areis primis punctis 2 vitreis in macula fusca notatis. (Maculæ fuscæ plus minus obsoletæ, frequenter in lineas vel punctos solutæ.) Alæ ochraceæ, parum translucidæ, apice subcoriaceæ, ante apicem macula rufescente lacerata irregulari (variabili) signatæ; margine antico recto, apice subsinuato lobum minutum rotundatum formante; venæ ochraceæ. Femora antica et intermedia subtus spinis 4; postica 3–4; spinis omnibus fuscis, apice viridi; illis femorum anteriorum majoribus, in medio fuscis. Abdomen carinatum, segmento primo supra processum compresso, postice bidentato.

♂ Lamina supra-analis transversa, rotundata, subincisa. Cerci trigonales. Lamina infra-genitalis plana, truncata. Campus tympanalis sinister opacus, infuscatus, dexter speculo elongato-ovato instructo.

♂. Long. corp. 24; pronot. 7; elytr. 44, lat. campi marginalis 16·5; femor. post. 24·5 millim.

Figure:—Fig. 1, the left elytron, of natural size: *h*, the humeral vein.

Hab. Mexico, Cordova (*Höge*).

2. **Tanusia ochracea**, sp. n. (Tab. XXII. fig. 2.)

Major. Tota ochracea. Pronotum antice attenuatum, sparse granulosum. Elytra illis *T. mexicanæ* haud dissimilia, margine antico tamen minus rotundato-dilatato et minus sinuato, apice minus acuto, unicoloria, punctis fuscis hic illic notata vel nebuloso-inquinata. Campus posterior in secunda area discoidali obliqua, maculam hyalinam arcuatam C-formem, alteramque minorem, necnon maculas minores obsoletas præbens. Alæ ochraceæ, semiopacæ, macula principali nulla vel obsoletissima. Femora omnia spinis crassioribus nigris armata. Abdomen segmentis 1–7 margine medio fere dentiformiter producto; primo superne processu compresso, a latere quadrato, superne rugoso, instructo.

♂. Lamina supra-analis trapezina. Lamina infra-genitalis ovata, apice leviter truncata, subsinuata. Campus tympanalis dexter speculo elliptico instructus.

♂. Long. corp. 31; pronot. 8·5; elytr. 54, lat. maxim. campi marginalis 14, campi discoidalis 16; femor. post. 33·5 millim.

Figure:—Fig. 2, the male insect: *h*, the humeral vein.

Hab. Guatemala, San Juan in Vera Paz (*Champion*).

CELIDOPHYLLA *, gen. nov.

Color viridis. Corpus valde compressum. Antennæ crassæ. Caput compressum, angustum, anterius planum, scutello faciali elevato, superne longiuscule mucronato; verticis rostrum breve, trigonale ascendens, sulcatum, haud prominulum; scrobicula antennarum crassissima, anterius late plana, superne angustiora, elevata. Pronotum antice truncatum, valde compressum, in medio constrictum, sulcis modice impressis. Prozona canthis elevato-marginatis, tuberculatis. Metazona infundibuliformiter dilatata, retro-producta, margine postico transverse arcuato, inciso. Lobi laterales postice rotundati, incisura humerali obtusangula. Elytra ampla, elongato-elliptica; margine antico basi arcuato, ultra medium subsinuato; margine postico recto, apice angulato. Vena discoidalis recta; vena humeralis ante medium ab illa divergens, ad medium marginem excurrens; vena media ante medium oriens. Campus marginalis venis obliquis remotis instructus; campus discoidalis in areas magnas divisus. Prosternum spinis brevibus conicis 2 armatum; meso- et metasternum utrinque spinam divergentem præbentia. Alæ amplæ, albido-hyalinæ, haud ocellatæ, venis et apice virescentibus. Femora omnia subtus fortiter spinosa; spinis ultimis lamellaribus, trigonalibus; lobis genicularibus inermibus. Tibiæ anticæ valde compressæ, supra rotundato-carinatæ, apice supra leviter dilatatæ, a latere ad foramina subtus leviter dilatatæ; foraminibus linearibus. Tibiæ intermediæ compressæ, a latere basi fusiformes, supra planulæ, marginibus acutis. Tibiæ posticæ vix compressæ, basi a latere leviter dilatatæ, supra spinulis paucis remotis armatæ. Lamina supra-analis lata, convexa, rotundata. Cerci lamellares, trigonales. Lamina infra-genitalis ♂ ovata, apice late subincisa.

This genus is nearly allied to *Mimetica*, the pronotum being emarginate behind and similarly formed; the anterior femora, however, have not all their spines foliaceous, and the anterior tibiæ are not flattened above, but compressed. The elytra are also more elongate, with the anterior field much narrower than the posterior, not dilated, but, on the contrary, narrowed beyond the middle, and with the humeral vein separating before the middle in an acute angle; their general shape more resembles that of the type of *Tanusia*. The genus should be placed between *Tanusia* and *Mimetica*.

1. **Celidophylla albimacula,** sp. n. (Tab. XXII. figg. 3–5.)

Valida, viridis vel leviter olivacea. Caput angustum. Pronotum: prozona angusta, lævigata, granulis obsoletis paucis, canthis 4–5-tuberculatis, sulco anteriore in lateribus evanido; metazona rugulosa, margine postico lato, transverse arcuato, inciso. Lobi laterales rotundati, crasse marginati. Elytra grandia, maculis remotis rotundatis albidis conspersa. Alæ albido-hyalinæ. Femora anteriora subtus spinis acutis compressis 3, intermedia 4, postica 8; primis gracilibus, sequentibus compressis, ultimis 2 lamellaribus trigonali-dilatatis. Tibiæ 1, 2 inermes, vel anticæ supra extus ante apicem dente minuto unico; posticæ supra spinulis utrinque 2. Abdomen carinatum, segmentis 1–5 supra dente erecto instructis.

♂. Lamina supra-analis transverse rotundata. Campus tympanalis sinister coriaceus, vena stridulante crassissima, fere piriformi; campus tympanalis dexter membranaceus, speculo piriformi.

♂. Long. corp. 29; pronot. 7; elytr. 67, lat. 29; camp. ant. 15, post. 20·5; fem. post. 35 millim.

FIGURES:—Fig. 3, the right male elytron and pronotum: *h*, the humeral vein; *s*, the speculum of the tambourine.—Fig. 4, the pronotum, magnified.—Fig. 5, the hind leg.

Hab. NICARAGUA, Chontales (*Janson*).

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* κηλίs, macula; φύλλον, folium.—With blotched wings.

MIMETICA, Pict.

Mimetica, A. Pictet, Mém. Soc. Phys. de Genève, 1888, p. 30; Brunner v. W. Monogr. der Pseudophyll. p. 255.

Synopsis specierum.

I. *Feminæ.*

a. Elytra latissima, campo marginali maxime dilatato.

b. Elytra in tertia parte apicali latissima. Pronotum longiusculum, planum, prorsum sensim attenuatum, margine postico producto, bilobato.

c. Elytra margine postico ultra medium plus minus undulato.

d. Elytra margine antico ultra medium crenulato (ad apicem venarum costalium minute dentiformiter producto). Color fuscus vel viridis.

e. Major. Ampliatio campi marginalis latissime rotundata. Campus discoidalis puncto hyalino unico vel nullo.—1. *mortuifolia*, Pict.

ee. Paulo minor. Ampliatio campi marginalis elytrorum minus rotundata (magis obtuse angulata). Campus discoidalis punctis hyalinis 3 vel plurimis. Color fuscus vel viridis.—2. *brunneri*, n.

dd. Elytra margine antico toto integro, haud crenulato; margine postico ultra medium obsolete undulato.—[3. *subintegra*, sp. n.]

cc. Elytra margine postico et antico totis integris, haud undulatis. Color mortuifolius.

d. Elytra castanea, puncto hyalino vix nullo.—[4. *castanea*, Br.]

dd. Elytra pallide plagiata, maculis erosis conspersa.—5. *marmorata*, sp. n.

bb. Elytra in quarta parte apicali latissima. Pronotum posterius parum dilatatum. Color ochraceus.—[*simoni*, Bol. (♀) (Amazons).]

aa. Elytra minus lata, campo marginali magis parallelo, ampliatione fere angulata. Vena humeralis in tertia parte apicali ad marginem anticum deflexa. Pronotum breve, anterius vix coarctatum, margine postico obtuse arcuatum, obsolete bilobatum.—6. *aridifolia*, sp. n.

II. *Mares.* Elytra margine antico ultra ampliationem diverso-modo valde exciso-sinuato.

a. Pronotum postice dilatatum.

b. Elytra margine postico undato-lobulato, apice caudato. Color fuscus vel viridis.—2. *brunneri*.

bb. Elytra margine postico integro, apice obtuso.—7. *siccifolia*, sp. n.

bbb. Elytra postice? Color viridis.—8. *viridifolia*, Br.

aa. Pronotum margine postico vix dilatato. Elytra margine postico biundato, ac macula discoidali hyalina magna notata. Color ochraceus.—[*simoni*, Bol. (sexus?) (Amazons).]

1. **Mimetica mortuifolia**, Pict. (Tab. XXII. fig. 7.)

Mimetica mortuifolia, Pict. Mém. Soc. Phys. de Genève, 1888, p. 30, t. 1. figg. 13–13 *c* (nec Brunn.).

♀. Majuscula, fusco-castanea. Pronotum longiusculum, planum, granulosum, anterius attenuatum, margine antico recto, postico valde bilobato. Elytra latissima, campo marginali latissime dilatato, basi valde attenuato, vena humerali sensim in media longitudine a vena discoidali divergens, furcata; campus marginalis latissimus, ampliatione maxima in tertia parte apicali sita, valde rotundata; margo anterior ultra medium obtuse crenulatus; margo posterior elytri totus arcuatus, ultra medium obtuse lobulatus; campus discoidalis ultra medium macula unica hyalina piriformi notatus.

Var. Elytra nonnunquam punctis minimis irregulariter notata.
♀. Long. corp. 27; pronot. 7; elytr. 39, lat. max. 25·5, camp. ant. 14·5; femor. post. 22; ovipos. 16 millim.

FIGURE:—Fig. 7, the left elytron of the female, of natural size: *h*, the humeral vein.

Hab. GUATEMALA (*Mus. Genavense*).

2. **Mimetica brunneri,** n. n. (Tab. XXII. fig. 8.)

Mimetica mortuifolia, Brunn. v. W. Monogr. der Pseudophyll. p. 256, t. 10. figg. 112 *a* (♀), 112 *b* (♂).

♀. *M. mortuifoliæ* simillima, at paulo minor. Grisea vel fusca. Elytrorum ampliatio campi antici minus rotundata, magis angulata, margine antico ultra illam recto, magis crenato. Campus discoidalis in medio maculis hyalinis 4–5, ac frequenter ad venam principalem macula hyalina ad quintam partem apicalem perspicua et in campo anteriore maculis alteris plus minus obsoletis notatus.
♂. Elytra margine postico valde lobato, margine antico ultra medium profundissime irregulariter sinuato, apice rotundato, campo anteriore maculis hyalinis frequentius nullis.
Var. Elytra punctis et tuberculis minutis fuscis, ac frequenter plagiis semihyalinis plus minus conspersa.
Varietas viridis. Tota viridis; elytra punctis fuscis conspersa ac in campo discoidali macula hyalina unica vel aggregata.

FIGURE:—Fig. 8, the left elytron of the female.

Hab. GUATEMALA, Las Mercedes (*Champion*); COSTA RICA (*Mus. Berol.*), Rio Sucio (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui, Tolé (*Champion*), Chiriqui (*Brunner*).

[3. **Mimetica subintegra,** sp. n. (Tab. XXII. fig. 9.)

♀. Tota ochracea vel viridis. Pronotum sensim illo *M. mortuifoliæ* conformis, sed margine postico minus producto, haud parabolico sed late transverse arcuato, obtuse inciso; lobis eaque de causa obtusissimis. Elytra illis speciei laudatæ conformia, maxime dilatata, ampliatione antica valde rotundata, margine antico toto integro, haud crenato, ultra ampliationem leviter sinuato; vena humerali ultra medium fere rectangulatim deflexa, triramosa. Margo posterior ultra medium vix vel obtusissime undatus. Campus discoidalis in tertia vel quarta parte apicali puncto hyalino unico vel 2 notatus.
♀. Long. corp. 31·5; pronot. 8; elytr. 40, lat. max. 27·5, camp. ant. 16; femor. post. 23; ovipos. 15 millim.

FIGURE:—Fig. 9, the left elytron and pronotum of the female, somewhat magnified.

Hab. COLOMBIA ?]

[4. **Mimetica castanea,** Brunn.

Mimetica castanea, Brunn. v. W. Monogr. der Pseudophyll. p. 256 (♀).

♀. Elytra castanea, nitida, marginibus nec dentatis nec undatis, macula hyalina disci vix perspicua.
♀. Long. corp. 27; pronot. 8·5; elytr. 50, lat. 29; femor. post. 25·5; ovipos. 16 millim.

Hab. COLOMBIA.]

5. **Mimetica marmorata,** sp. n. (Tab. XXII. figg. 10, 11.)

♀. Fusco-grisea, mortuifolia. Pronotum postice parum dilatatum, granosum, postice quam in *M. mortuifolia* et *M. brunneri* minus productum, at distincte bilobatum. Elytra campo anteriore valde dilatato, ampliatione marginis antici modice rotundata; margine ultra medium minute crenulato; vena humerali ultra medium ad apicem marginem deflexa, 2–3-ramosa; margine ultra illam fere recto. Margo posterior integer, haud lobatus, in medio rectus, in parte terminali leviter sinuatus. Elytrorum pictura valde variabilis:
a. Fusco-castanea, punctis et maculis subhyalinis numerosis ubique conspersa; ampliatione antica magis rotundata. (*Costa Rica.*)—*b.* Tota brunneo- et griseo-marmorata; campo anteriore maculis hyalinis

nullis; campo posteriore maculis hyalinis numerosis, irregularibus, ultra medium aggregatis, necnon punctis et maculis irregularibus nigris consperso; ampliatione antica magis angulata. (*Panama.*)

♀. Long. corp. 32; pronot. 8; elytr. 40, lat. max. 26, camp. ant. 14; femor. post. 24; ovipos. 15 millim.

♀. Long. corp. 20·5; pronot. 7; elytr. 47, lat. max. 30, camp. ant. 17·5; femor. post. 23·5; ovipos. 12 millim.

FIGURES:—Fig. 10, the left elytron of the female.—Fig. 11, the ovipositor, magnified.

Hab. COSTA RICA, Caché (*Rogers*); PANAMA, Tolé (*Champion*).

6. **Mimetica aridifolia,** sp. n. (Tab. XXII. figg. 12, 13.)

♀. Mortuifolia. Pronotum breve, latiusculum, minute granulosum, postice parum dilatatum, margine antico sinuato. Metazona quam prozona duplo brevior, per sulcum profundum angulatum signata, apice reflexa, ascendens, sparse crasse tuberculata, margine postico producto, transverse arcuato, minute inciso, brevissime bilobato. Elytra modice lata, in quarta parte distali latissima, margine antico recto; parte proximali basin versus modice attenuata, parte distali trigonali, margine antico 5–6-dentato; margine postico prope apicem leviter undato, apice acute producto. Campus anterior maculis et punctis fuscis conspersus (maculis 2 in media longitudine pallide circumdatis); campus discoidalis in medio maculis 2 vel plurimis, ultra medium maculis 2–3 nigris notatus.

♀. Long. corp. 19·5; pronot. 6·5; elytr. 35, lat. max. 19; alæ 24; femor. post. 21; ovipos. 11·5 millim.

FIGURES:—Fig. 12, the left elytron of the female: *h*, the humeral vein.—Fig. 13, the pronotum of the same, magnified.

Hab. COSTA RICA, Rio Sucio (*Rogers*).

This insect seems to resemble *M. simoni*, Boliv., from Venezuela, but it has much narrower elytra. The short pronotum is characteristic of *M. aridifolia*, as well as the strong sulcus which excavates the metazona. This sulcus is not the typical one (which is obliterated in *Mimetica*), but a groove formed by the upcurving of the metazona.

7. **Mimetica siccifolia,** sp. n. (Tab. XXII. figg. 14–16.)

♂. Statura *M. mortuifoliæ.* Fusco-castanea, fusco-punctata. Pronotum granulosum, postice latiuscule productum, obtuse bilobatum. Elytra brevia, apice angulata, haud caudata in parte tertia latitudine maxima, vena humerali ultra medium divergente. Campus marginalis ultra medium profunde irregulariter sinuatus, margine antico crenulato; margine postico apice toto integro, in medio recto; campo posteriore ultra medium macula discoidali trigonali hyalina necnon alteris 1–3 minoribus instructo. Pedes frequenter fusco-punctati.

Var. *a.* Elytra apice rotundata, crenulata.—*b.* Elytra apice excisa, breviter caudata.—*c.* Elytra maculis hyalinis nullis.

FIGURES:—Fig. 14, the right elytron of the male.—Fig. 15, the pronotum and head, magnified.—Fig. 16, the apex of an elytron of the varietal form.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet, Caldera (*Champion*).

8. **Mimetica viridifolia,** Brunn.

Mimetica viridifolia, Brunn. v. W. Monogr. der Pseudophyll. p. 257 (♂).

"Colore læte viridi. Pronotum postice dilatatum. Elytra parte latissima in quarta parte apicali sita, maculis hyalinis nullis, margine antico pone partem latissimam profunde eroso-sinuato. ♂."

Long. corp. 17; pronot. 6·5; elytr. 23, lat. 16·5; femor. post. 15·5 millim.

Hab. PANAMA, Chiriqui (*coll. Dohrn*).

[TYPOPHYLLUM, Serv.

Typophyllum, Serville, Hist. Nat. des Orthopt. p. 439 (1839); Pictet; Bolivar; Brunner v. W. Monogr. der Pseudophyll. p. 257.

Tovaria, Bolivar, Ann. Soc. Ent. Fr. 1890, p. 141.

1. **Typophyllum flavifolium**, sp. n. (Tab. XXII. fig. 6.)

Ochracea. Elytra brunneo-marmorata, margine postico toto arcuato; margine antico in quarta parte apicali rotundato-ampliato, dehinc recto. Vena principalis posterius ramum furcatum et ramum rectum emittens. Areola inter illos et venam principalem late rotundato-trigonalis. Campus discoidalis campo marginali paulum angustior, puncto hyalino nullo. Femora antica et intermedia quadrilobata, lobis magnis, trigonalibus, in spinam excurrentibus; primo minuto, fere spiniformi. Femora postica spinulis 5–8 armata; spinis ultimis 1 vel 2 majoribus. Tibiæ intermediæ in ampliatione utrinque dente armatæ. Tibiæ posticæ in margine interno ultra medium spinulis minimis 4, externo in medio dentibus obtusis vel tuberculis 2 armatis. Abdomen carinatum, segmento 6° tuberculo compresso a latere quadrato angulisque superis tuberculiformibus instructum. Ovipositor margine supero remote denticulato, apice scabro valde denticulato.

♀. Long. corp. 21·5; pronot. 5·5; elytr. 30, lat. 18·5, camp. ant. 11; femor. post. 18; ovipos. 9 millim.

Figure :—Fig. 6, the left elytron of the female.

Hab. Venezuela (*Mus. Genavense*).

This species comes near *T. trapeziforme*, but the lobes of the anterior femora seem to be much larger and the hind tibiæ are not trilobate.]

[CHLOROPHYLLA, Pict.

Chlorophylla, A. Pictet, Mém. Soc. Phys. de Genève, 1888, p. 42; Brunner v. W. Monogr. der Pseudophyll. p. 265.

Synopsis specierum.

a. Vena principalis elytri recta.

b. Campus marginalis quam campus discoidalis angustior; margo posterior integer.—[*rufipes*, Br. (Bolivia).]

bb. Campus marginalis quam campus discoidalis latior; margo posterior apice sinuatus.

c. Elytra apice obtuse acuminata. Femora postica extus spinulis 3–4 armata.—1. *amplifolia*, sp. n.

cc. Elytra apice acute producta. Femora postica extus tota longitudine spinulosa.—2. *fagifolia*, sp. n.

aa. Vena principalis elytri plus minus arcuata:

b. leviter decurva. Elytra lata, apice haud retro-producto; campo marginali venis transversis instructo.—[*latifolia*, Pict. (Colombia, &c.).]

bb. Valde decurva. Elytra minus lata, apice acute retro-decurvo; campo marginali venis transversis nullis.—3. *arcuata*, sp. n.

1. **Chlorophylla amplifolia,** sp. n. (Tab. XXII. fig. 17.)

♀. Ochracea. Pronotum postice quam antice duplo latius; canthis prozonæ acutis, granulis 2–3 notatis; metazona rugulosa, margine postico subarcuato. Elytra amplissima, semimembranacea, margine anteriore toto arcuato, margine posteriore apice late sinuato; apex elytri obtuse acuminatus. Alæ amplissimæ, late rotundatæ, hyalinæ. Femora antica et intermedia compressa, subtus spinulis remotis in utroque margine armata; postica gracillima, in margine externo spinulis 3–4 brunneis instructa. Lobi geniculares intermedii extus dente minuto obtuso armati; illi femorum posticorum utrinque breviter dentiformes. Tibiæ anticæ teretes, foraminibus sinuatis; intermediæ ante medium compressæ, fusiformiter dilatatæ, ampliatione supra planata, marginibus acutis; tibiæ posticæ supra planatæ, in utroque margine ultra medium spinulis rudimentalibus fuscis 2–3 instructæ. Ovipositor longiusculus, modice arcuatus, apice nigro, valde crenato. Lamina supra-analis rotundato-trapezina, postice rotundato-attenuata; lamina infra-genitalis sat rotundata, anguste profunde incisa.

♀. Long. corp. 32; pronot. 8·5; elytr. 54, lat. max. camp. marg. 20·5, camp. discoidalis 14; femor. post. 26·5; ovipos. 19·5 millim.

FIGURE:—Fig. 17, the left elytron of the female, somewhat magnified: *h*, the humeral vein.

Hab. ECUADOR?, Caschiboya.

We should have taken this insect to be the female of *C. latifolia*, had not Brunner v. Wattenwyl indicated females to that species which do not seem to differ from the males in the form of the elytra.

2. **Chlorophylla fagifolia,** sp. n. (Tab. XXII. fig. 18.)

Viridi-ochracea. Pronotum illi *C. amplifoliæ* simile. Elytra elliptica, apice acute producta, margine antico toto arcuato, apice vix sinuato; margine postico parum arcuato, apice haud profunde sinuato; vena principali rectissima; superficie punctis nonnullis fuscis conspersa. Alæ amplæ, hyalinæ. Femora postica lineares, marginibus spinulosis, margine externo toto spinuloso. Tibiæ posticæ supra spinulis fuscis paucis frequenter deficientibus præditæ. Ceterum ut in *C. amplifolia*.

Var. Ochracea; elytris maculis majoribus et magis numerosis conspersis.

♀. Long. corp. 43; pronot. 9·5; elytr. 64, lat. max. camp. marg. 23, camp. discoidalis 15·5; femor. post. 31; ovipos. 20 millim.

FIGURE:—Fig. 18, the right elytron of the female, somewhat magnified: *h*, the humeral vein.

Hab. ECUADOR.

3. **Chlorophylla arcuata,** sp. n. (Tab. XXII. fig. 19.)

♂. Viridis. Pronotum postice valde dilatatum, margine postico quam anticus fere triplo latiore; ejus canthi antice acuti, in medio granulis nonnullis notati; metazona obsolete punctata. Elytra valde arcuata, vena principali curvata; margine antico subrecto, plus quam in dimidia parte distali maxime arcuato, ante apicem leviter sinuato; margine postico dimidia parte basali levissime arcuato, dehinc leviter sinuato. Apex elytri longe acuminatus. Venæ campi marginalis apice in margine nodulos fuscos formantes; margo anterior propterea ad illas minute undatus. Alæ hyalinæ, valde rotundatæ. Femora antica et intermedia subtus utrinque spinulis 4–5 armata, illis marginis interni fuscis, apice viridi. Tibiæ 1, 2 illis *C. amplifoliæ* conformes. Pedes postici et abdomen . . .? Campus tympanalis elytri sinistri coriaceus; elytri dextri speculum magnum ellipticum, per venas 2–3 circumdatum.

♂. Long. corp.?; pronot. 7; elytr. 49, lat. max. camp. marg. 15, lat. camp. discoidalis 12 millim.

FIGURE:—Fig. 19, the left elytron of the male: *h*, the humeral vein.

Hab. ECUADOR (*Mus. Genavense*).]

[CYCLOPTERA, Serv.

Cycloptera, Serville, Hist. Nat. des Orthopt. p. 439 (1839); Brunner v. W. Monogr. der Pseudophyll. p. 267.

1. **Cycloptera carinifolia,** sp. n. (Tab. XXII. fig. 20.)

♂. Maxima, crassissima, tota viridis, immaculata. Pronotum posterius quam anterius duplo latior. Prozona quam metazona valde brevior ac angustior, supra rotundata, sulcis rufis; anteriore subtiliore, posteriore arcuata, subangulata, supra utrinque apice foveolata, dehinc subito evanida, scilicet in lateribus subtili obsoleta. Metazona latissima, postice rugulosa, margine postico late rotundato, sinu humerali fere rectangulo, rotundato. Lobi laterales quam altiores valde breviores, infra truncati, angulis rotundatis. Prosternum, meso- et metasternum acute bispinosa; spinis perpendicularibus, modice longis. Elytra amplissima, late elliptica, margine anteriore toto arcuato, præsertim ultra medium; margine postico arcuato, ultra medium subsinuato (apice obtusangulo?). Campus discoidalis quam campus marginalis fere duplo latior. Vena mediastina (*m*) valida, 3–4-ramosa. Vena principalis (*discoidalis*, *d*) subrecta, unica, basi crassissima, subtus maxime lamellari-prominula, venas costales 5–6 emittens, dehinc furcata: ejus ramus anterior (*vena humeralis*, *h*) ramosus, ad partem curvatissimam marginis antici excurrens; ejus ramus posterior (*vena discoidalis*, *d*) fere rectangulatim retro-decurvus, extus ramos 3–5 ad marginem apicalem emittens: primo (*z*) apicem elytri formante, sequentibus (*z'*) pone apicem finem habentibus. Vena ulnaris (*u*) longitudinalis, a vena anali emissa, cum vena discoidali (*d*) confluens. Campus analis (*a*) maximus, elongato-trigonalis, per canthum crassissimum, prominulum, per venam analem formatum, a campo discoidali separatus. Campus tympanalis maximus; sinister coriaceus, speculo ovato, subcoriaceo, dexter subcoriaceus, speculo vitreo (*s*) instructo. Alæ longiores quam latiores, rotundatæ, hyalinæ. Pedes graciles. Femora 1, 2 supra teretes, subtus marginibus acutis, margine interno tota longitudine dentibus minimis parum acutis instructo. Femora postica subtus compressa, carina externa prominula, tota longitudine dentibus minutis armata; carina interna tenuis, in latere interno dejecta, dimidia parte distali dentibus 4, 5 prædita. Spinulæ omnes apice nigræ. Lobi geniculares omnes acuti, postici spinosi. Tibiæ anticæ supra teretes, foraminibus elongato-rimatis, rimis superne magis apertis; valvis in utroque latere infra medium margine obtusangulo, infra longiuscule subsinuato. Tibiæ intermediæ quadri-carinatæ, supra planæ ac inermes, a latere basi nonnihil fusiformes. Tibiæ posticæ . . .? Lamina supra-analis transversa, margine arcuato. Cerci compressi, trigonales, acuti. Lamina infra-genitalis ovata, obtusangulatim incisa, biangulata; stylis nullis.

♂. Long. corp. 39; pronot. 13; lat. metazonæ 13·5; elytr. 58·5, lat. 42; long. camp. analis 33; femor. post. 32 millim.

FIGURE:—Fig. 20, head, pronotum, and right elytron of the male: *m*, mediastinal vein; *h*, humeral vein, fused at the base with the discoidal vein, and forming together the principal vein; *d*, discoidal vein; *z*, *z'*, its branches; *au*, anal and ulnar veins fused together, forming the ridge of the dorsal field *a*; *u*, ulnar vein, separating from the anal vein; *o*, area discoido-ulnaris; *a*, anal field; *s*, speculum of the tambourine.

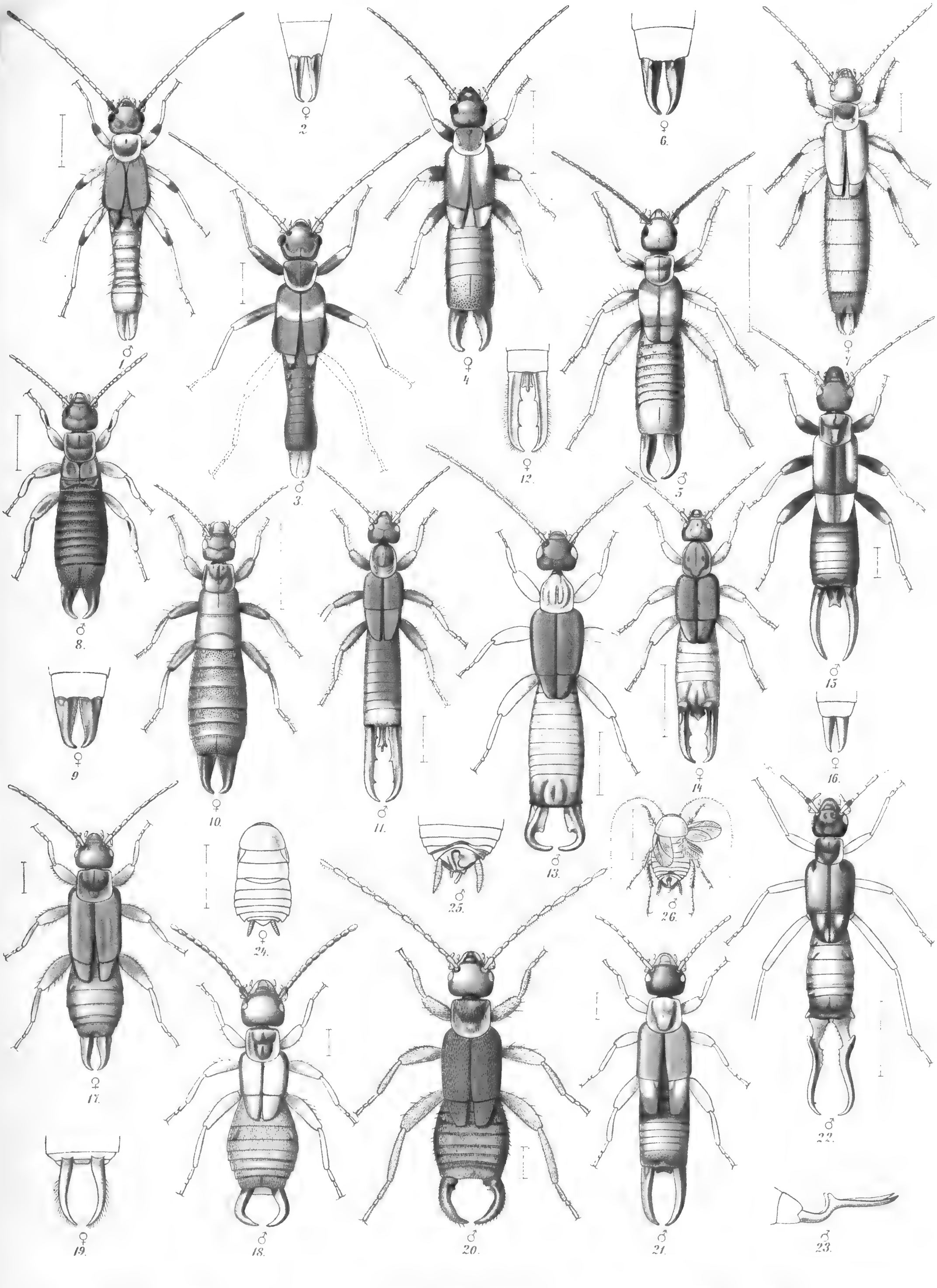
Hab. GUIANA (*Mus. Genavense*).

This large insect presents some analogy in the venulation of its elytra with the Corycites (tribe Mecopodinæ).]

ERRATUM.

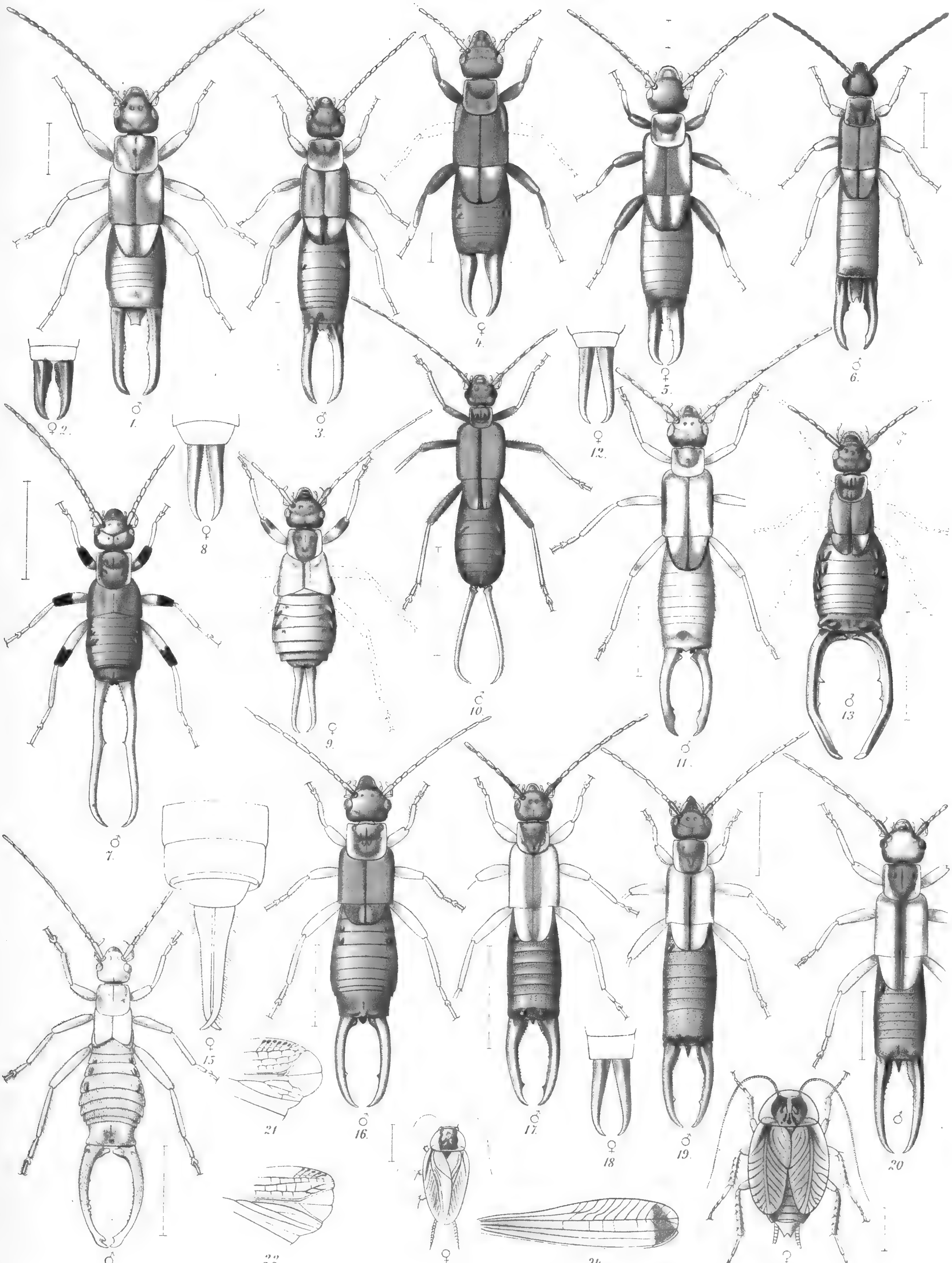
A singular mistake has been made in the synopsis of the Gryllidæ, *anteà*, p. 198. It must be rectified as follows:—

2, 2. Pedes antici gressores. Ovipositor rectus.
3. Scutellum faciale inter antennas tumidum.—MYRMECOPHILINÆ.
4. Antennæ crassiusculæ, parum longæ. Tibiæ posticæ dilatatæ, spinis longis mobilibus paucis armatæ.—**MYRMECOPHILITES.** (Genus *Myrmecophilus*.)
4, 4. Antennæ longæ, setaceæ. Tibiæ posticæ graciles, biseriatim serrulatæ.—**MOGISOPLISTITES.** (Genera *Ectatoderus, Cycloptilus, Liphoplus*.)
3, 3. Scutellum faciale infra antennas transversum. Antennæ longæ, setaceæ. Tibiæ posticæ haud dilatatæ, biseriatim spinosæ.
4. Tibiæ posticæ inter spinas haud serratæ.—GRYLLINÆ.
4, 4. Tibiæ posticæ inter spinas serratæ.—ENEOPTERINÆ.
1, 1. Tarsorum secundus articulus, etc.



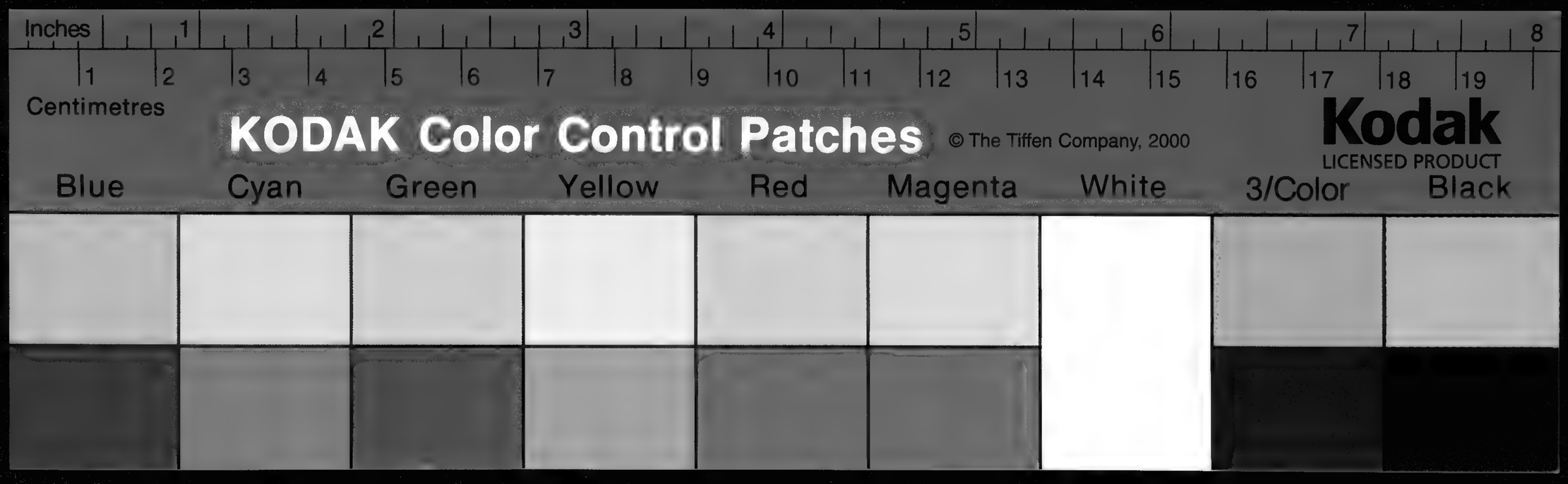
1, 2. DIPLATYS JANSONI.
3. DIPLATYS SEVERA.
4. ECHINOPSALIS GUTTATA.
5, 6. PSALIS GAGATINA.
7. PSALIS THORACICA.
8, 9. ANISOLABIS JANEIRENSIS.
10. ANISOLABIS ANTONI.
11, 12. SPARATTA NIGRINA
13. SPARATTA PELVIMETRA VAR.
14. SPARATTA SCHOTTI.
15, 16. LABIA BILINEATA.
17. LABIA CHALYBEA.
18, 19. LABIA ARCUATA I.
20. LABIA ARCUATA II.
21. LABIA CHAMPIONI.
22, 23. OPISTHOCOSMIA AMERICANA.
24. LOBOPTERA ANNULICORNIS.
25, 26. ANISOPYGIA JOCOSICLUNIS.

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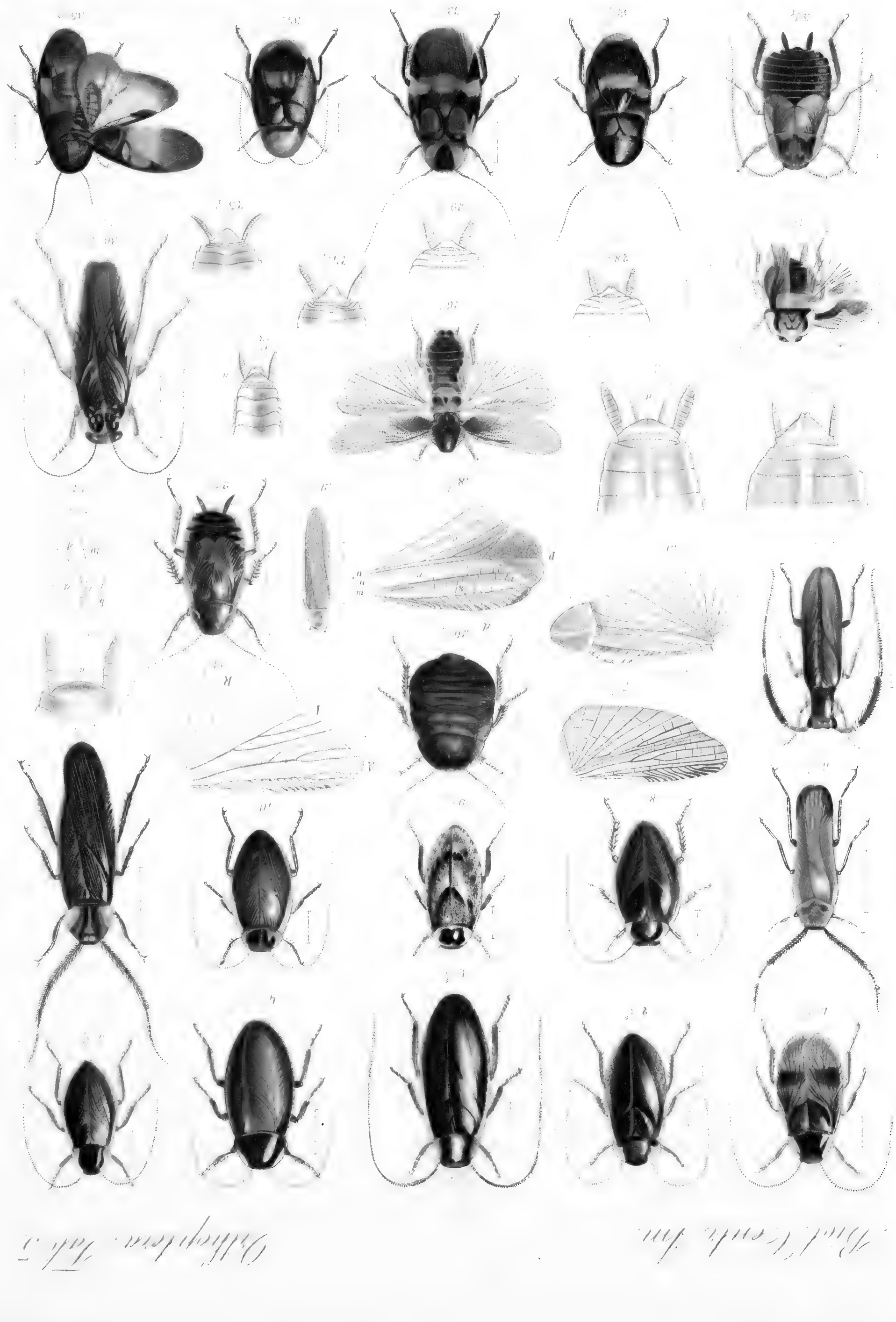


1, 2. SPONGOPHORA BRUNNEIPENNIS, I.
3. SPONGOPHORA BRUNNEIPENNIS, II.
4, 5. SPONGOPHORA PYGMAEA.
6. SPONGOPHORA ROGERSI.
7, 8. NEOLOBOPHORA RUFICEPS.
9. NEOLOBOPHORA BOGOTENSIS.
10. ANCISTROGASTER VARIEGATUS.
11, 12. ANCISTROGASTER TOLTECUS.
13. ANCISTROGASTER CHAMPIONI.
14, 15. ANCISTROGASTER IMPENNIS.
16. FORFICULA? SMITHI.
17. 18. SPHINGOLABIS TAENIATA, I.
19. SPHINGOLABIS TAENIATA, II.
20. SPHINGOLABIS CALIFORNICA.
21. CHORISONEURA FLAVIPENNIS.
22. CHORISONEURA TAENIATA.
23, 24. CHORISONEURA ANOMALA
25. HEMIPTEROTA PUNCTIPES.

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1. ANAPLECTA FLAVICLAVIA.
2. ANAPLECTA ELLIPTICA.
3. ANAPLECTA DOHRNIANA.
4. ANAPLECTA JANSONI.
5. ANAPLECTA DEGLPHENS.
6, 7. THYRSOCERA ATRANTIACA.
8. PLECTOPTERA FELICARIA.
9. PLECTOPTERA PICTA.
10. PLECTOPTERA CRECMDATA.
11, 12, 13. CALOBLATTA TRICOLOR.
14, 15. HYPNORIA AMOENA.
16. HYPNORIA PICHELLA.
17, 18, 19. HYPNORIA BLANDA.
20. HOMOEOGAMIA AFACHA.
21, 22, 23. ISCHNOPTERA UHLERI.
24. ISCHNOPTERA CONSOBRINA.
25. ISCHNOPTERA CONFORMIS.
26. CALOLAMPRA BISPINOSA.
27, 28, 29. CERATINOPTERA DIANIANA.
30. PSEUDOPHYLLODROMIA VENOSA.
31. TEMNOPTERYX TEXENSIS.
32. HOLOCOMPSA BINOTATA.
33. HOLOCOMPSA ZAPOTECA.
34. HOLOCOMPSA COLLARIS.
35. HOLOCOMPSA TOLTECA.



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1, 2.	ANAPLECTA MEXICANA.	15.	ANAPLECTA DOHRNIANA.	31, 32.	TEMNOPTERYX NITIDA.
3, 4.	ANAPLECTA MOXA.	16.	ANAPLECTA FULGIDA.	33.	NYCTOBORA TRUNCATA.
5.	ANAPLECTA GRANDIPENNIS.	17.	PLECTOPTERA CIRCUMDATA.	34.	NYCTOBORA AZTECA.
6.	ANAPLECTA MAJOR.	18.	PSEUDECTOBIA SUBPECTINATA.	35.	RHICNODA REFLEXA.
7.	ANAPLECTA FALLAX.	19, 20, 21.	BLATTA NAHUA.	36.	EPILAMPRA FALLAX.
8.	ANAPLECTA ELLIPTICA.	22.	BLATTA CHICHIMECA.	37.	EPILAMPRA CRASSA.
9.	ANAPLECTA JANSONI.	23.	ISCHNOPTERA INCA.	38.	EPILAMPRA CONSPERSA.
10, 11.	ANAPLECTA DECIPIENS.	24, 25, 26.	TEMNOPTERYX KAUPIANA.	39.	CALOLAMPRA BREVITARSIS.
12.	ANAPLECTA REPLICATA.	27, 28.	TEMNOPTERYX GUATEMALAE.	40.	EURYCOTIS 4-SQUAMATA.
13, 14.	ANAPLECTA FLABELLATA.	29, 30.	TEMNOPTERYX FISSA.	41, 42.	PELMATOSILPHA VILLANA.

Zehntner del. Vienna, Rannwarth Th. lit. imp.

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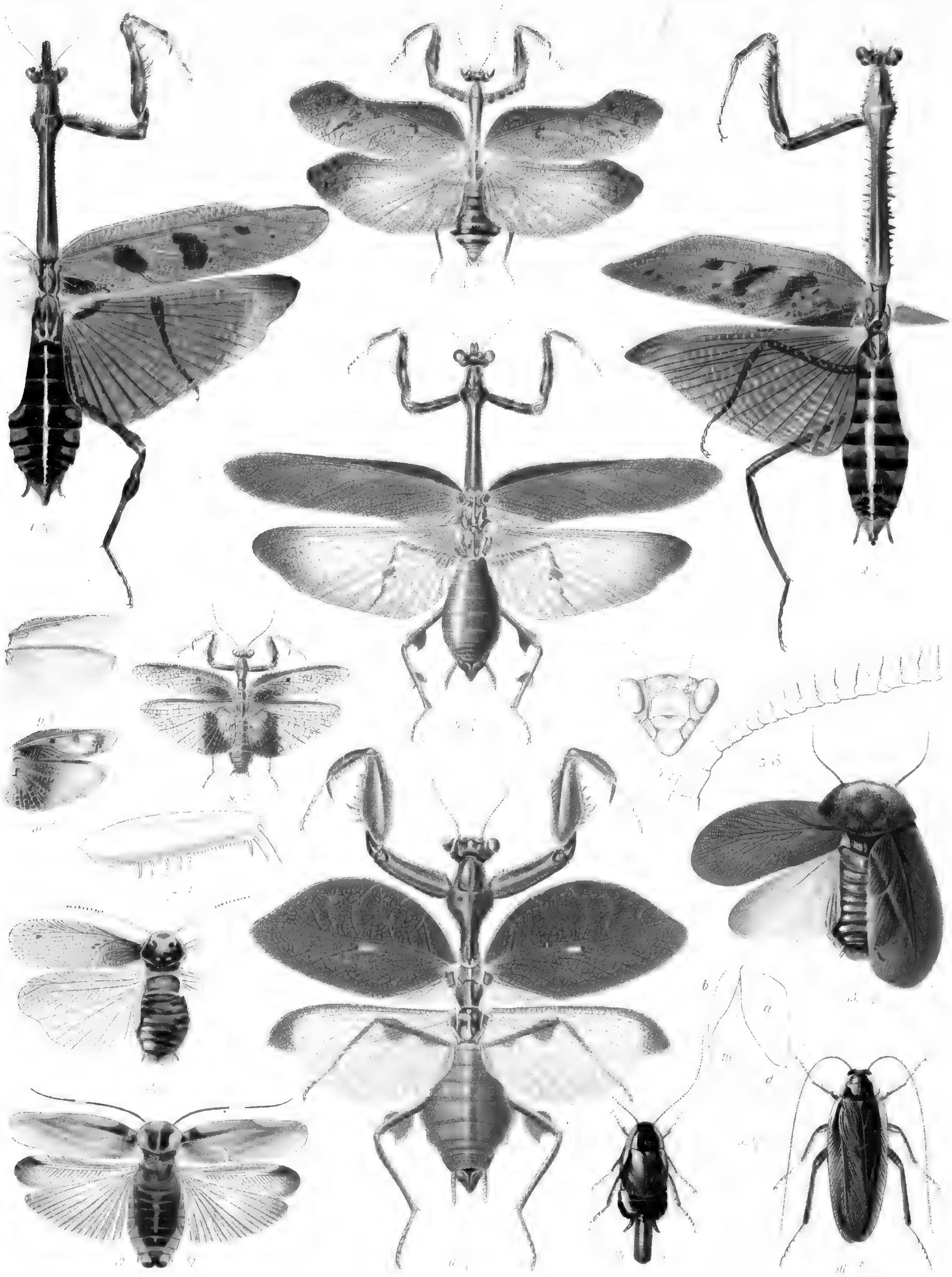
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1. PANCHLORA CRIBROSA.
2. PANCHLORA LATIPENNIS.
3. HOMOEOGAMIA BOLLIANA.
4, 5. HOMOEOGAMIA AZTECA.
6. PARALATINDIA MANCELLA.
7. LATINDIA DOHRNIANA.
8. LATINDIA INCA.
9. LATINDIA CUCULLATA.
10. LATINDIA DELICATULA.
11—14. PARALATINDIA PERUVIANA.
15—17. MEGALOBLATTA RUFIPES.
18. ARCHIMANDRITA DEPLANATA.
19. CACOBLATTA SCABRA.
20. HEMIBLABERA MANCA.
21. HEMIBLABERA GRANULATA.
22. BLABERA RUFESCENS.
23. BLABERA IMMACULA.
24. BLABERA SCUTATA.
25. BLABERA THORACICA.
26—31. BLABERA TRAPEZOIDEA.

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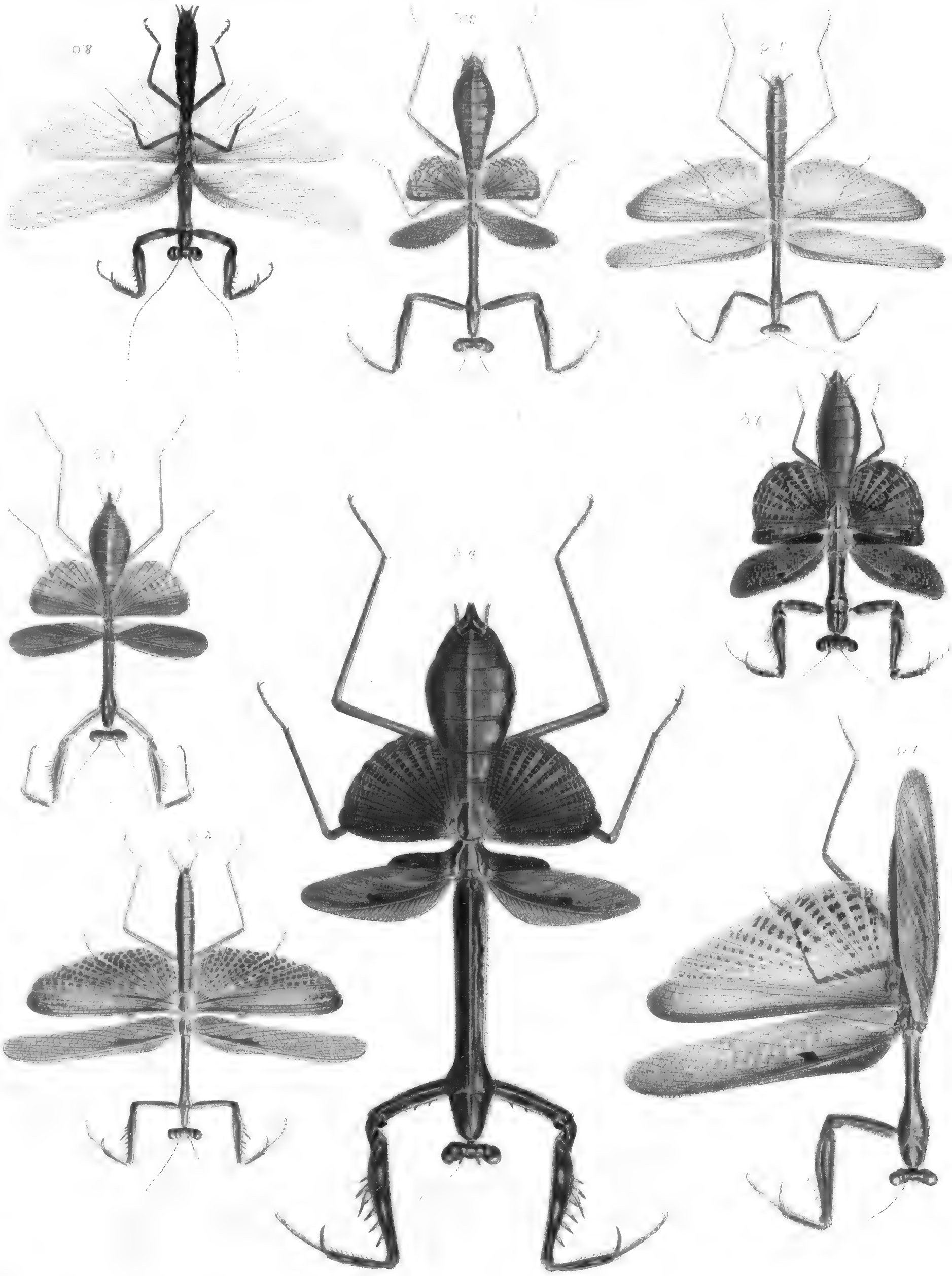
1. VATES PARAENSIS.
2. THEOCLYTES SPINICOLLIS.
3. ACANTHOPS GODMANI.
4, 5. VATES PECTINATA.
6, 7. PHYLLOMANTIS LAURIFOLIA.
8. ACONTISTA 4-MACULATA.
9. ACONTISTA VITREA.
10. ACONTISTA INQUINATA.
11. PANCHLORA TOLTECA.
12. ACROBLATTA LUTEOLA.
13. CAPUCINUS CUCULLATUS.
14—17. ISCHNOPTERA INAEQUALIS.

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Vienna: Bamwarth Ph. lit. imp.

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Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Inches 1 2 3 4 5 6 7 8
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Inches 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Centimetres
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

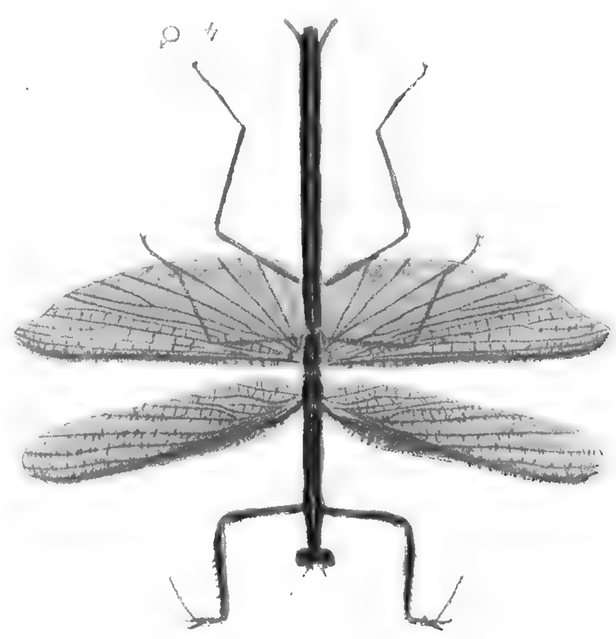


Inches 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Centimetres
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
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Vienna. Bauerwarth Th. lith. imp

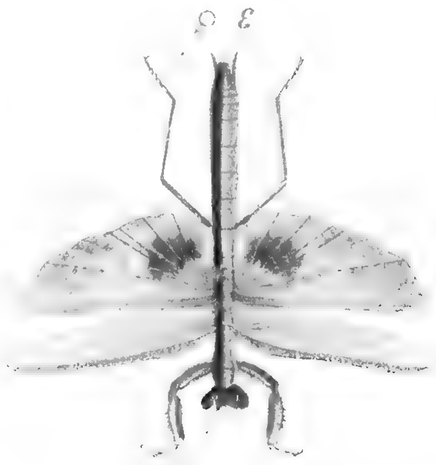
1. ANGELA FERRUGINEA.
2. STAGMATOPTERA SEPTENTRIONALIS.
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4, 4a, b. HARPAGONYX GRYPS.
5. THEOCLYTES HOFMANNI.

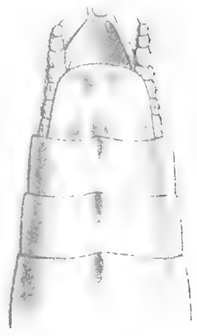

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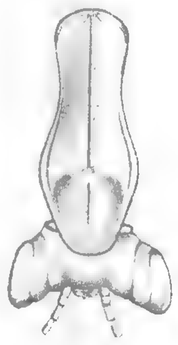

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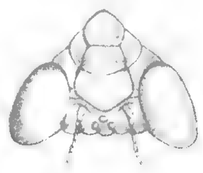

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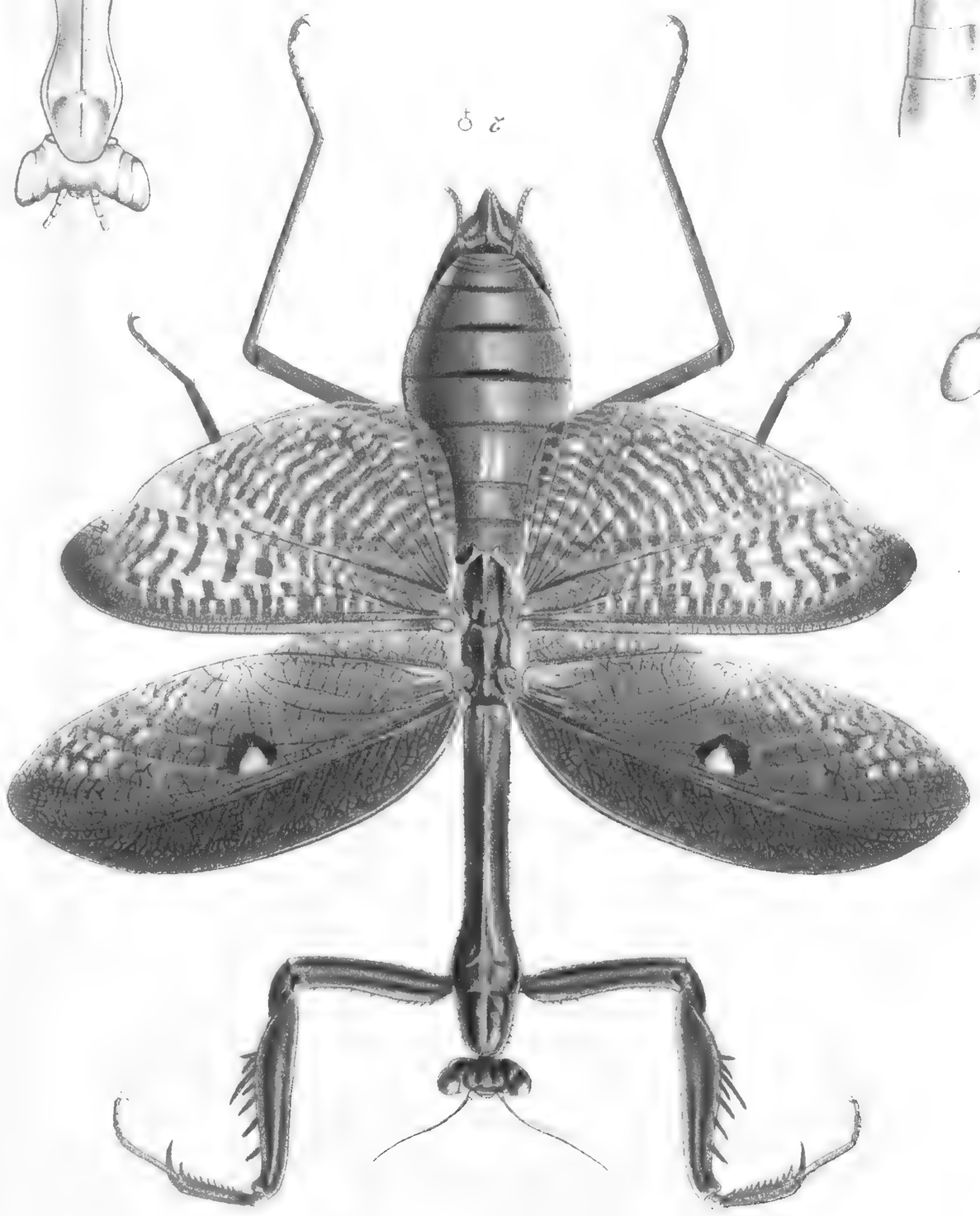

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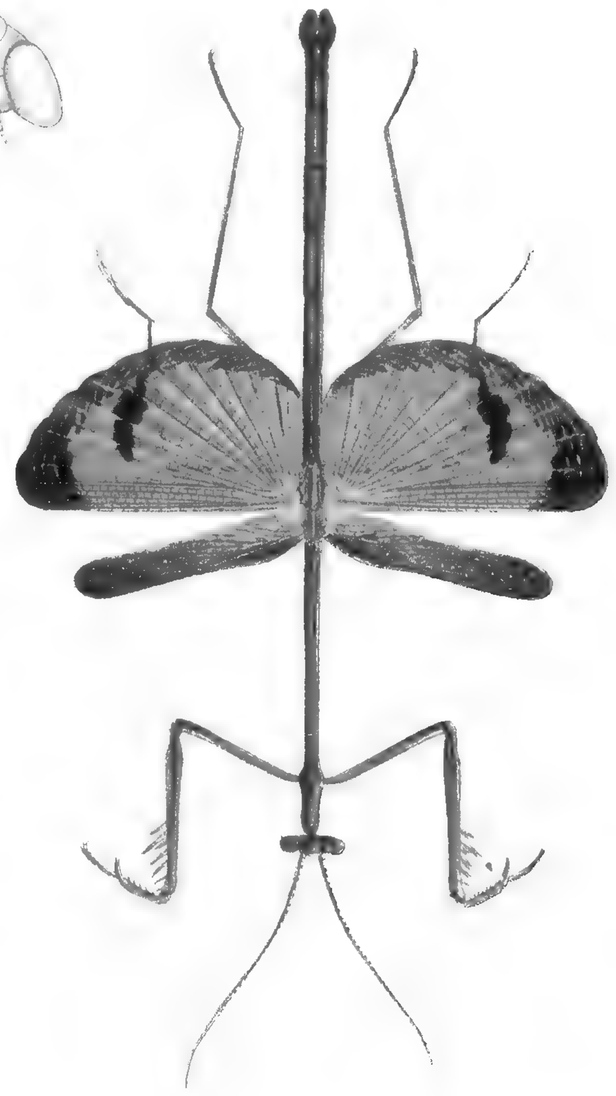

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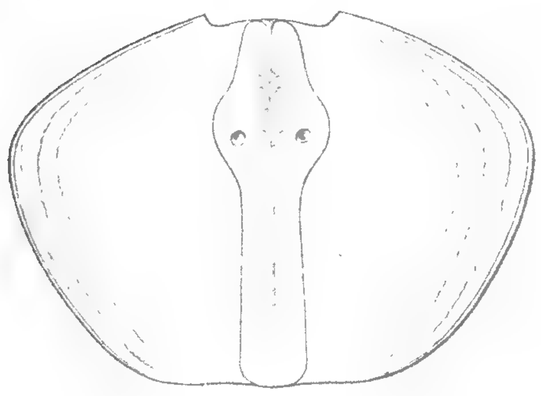

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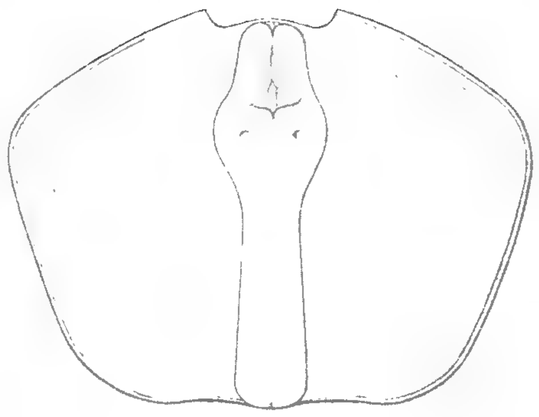

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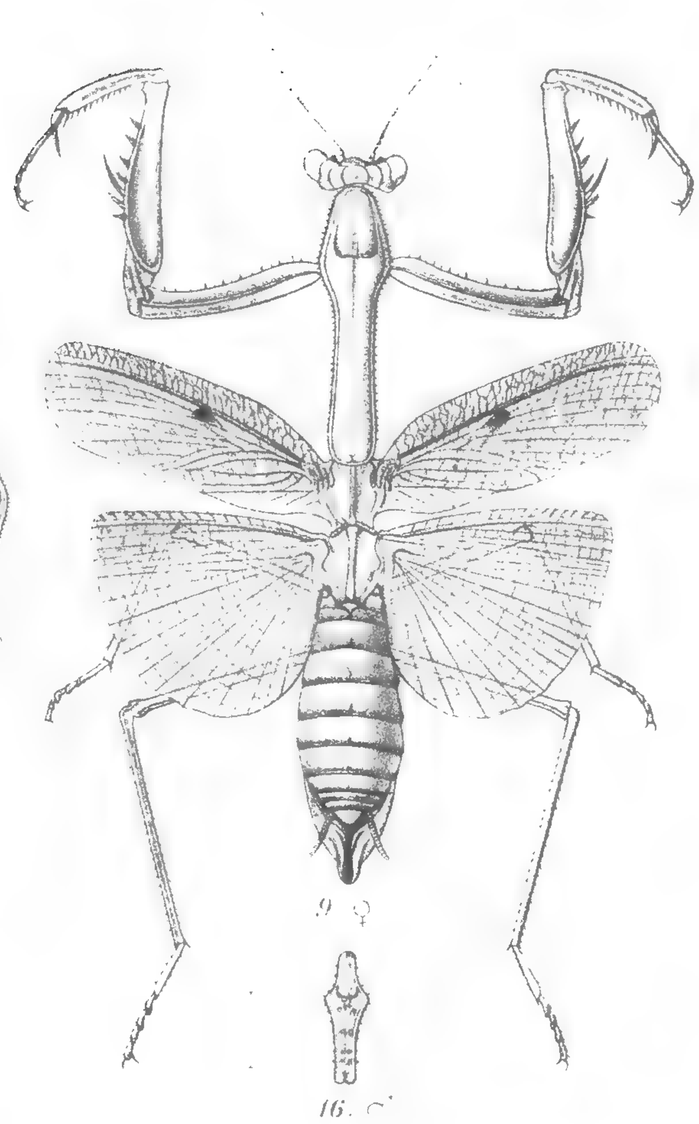

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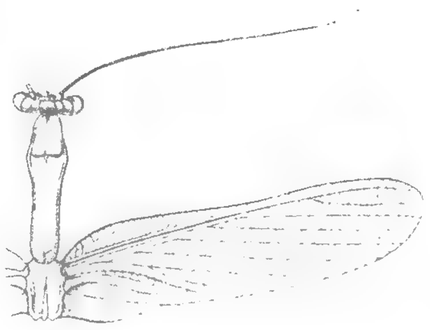
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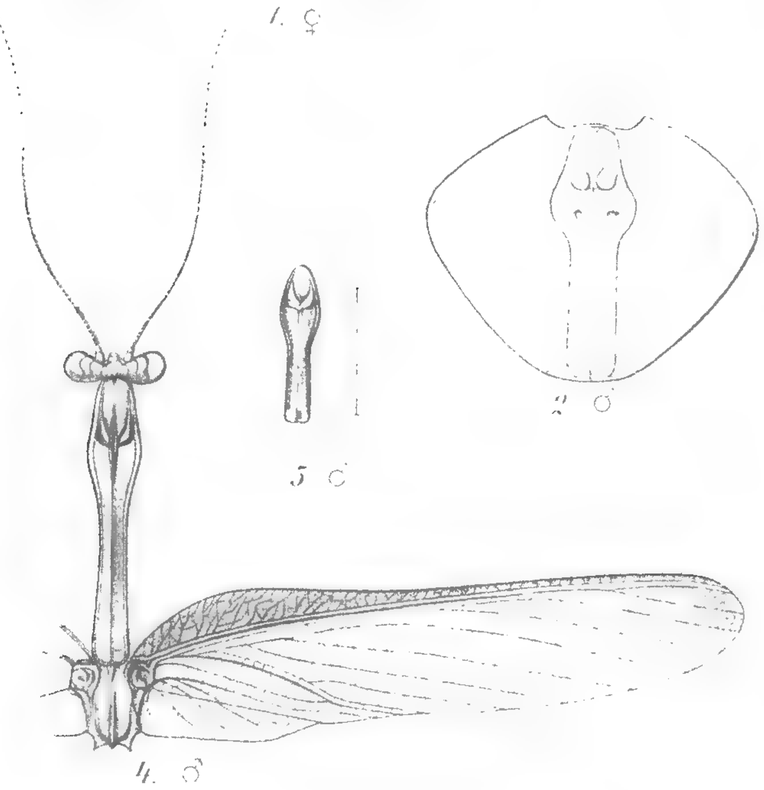

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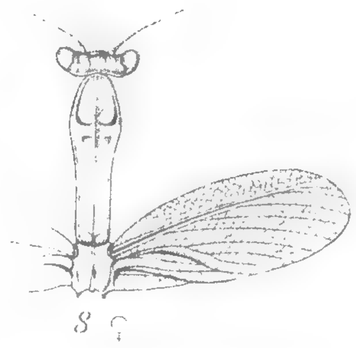
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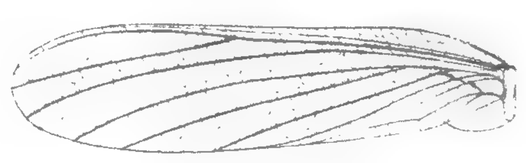

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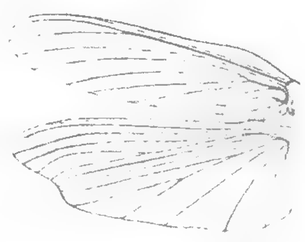

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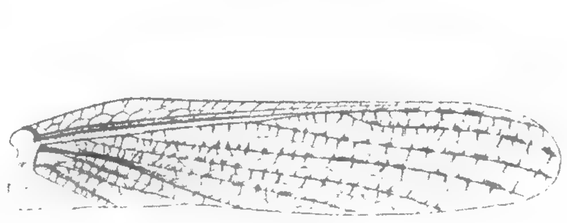
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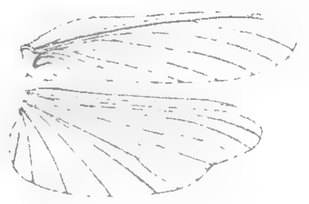

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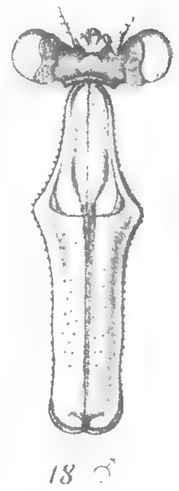

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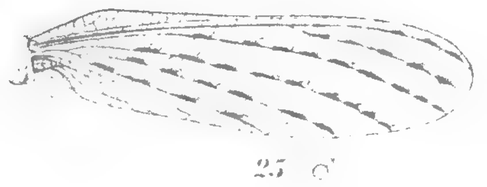

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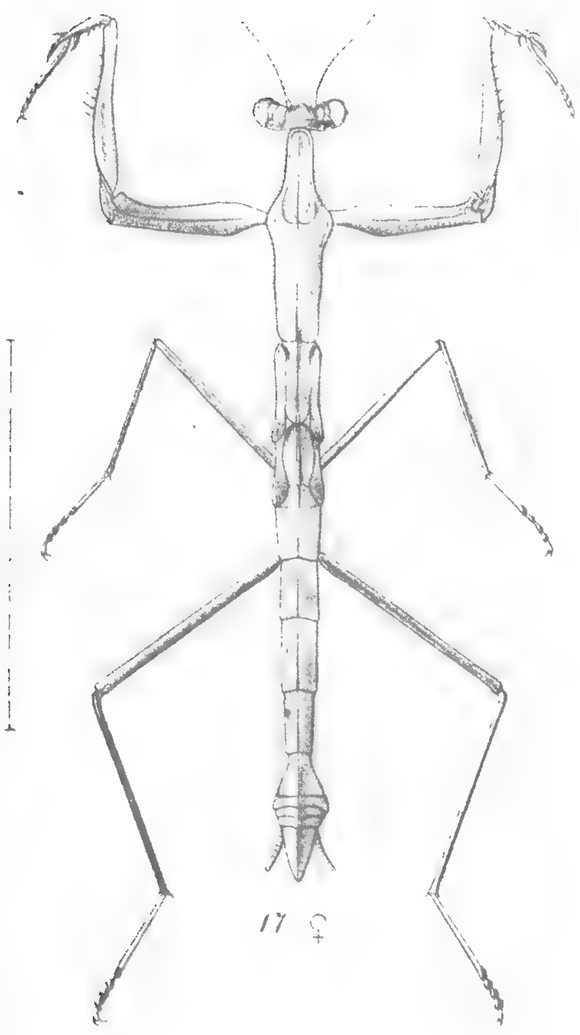

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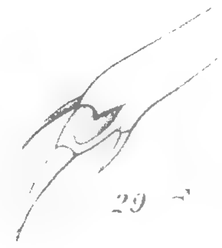

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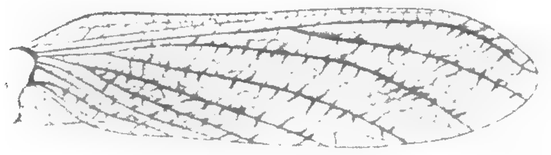

27. ♂


17. ♀

26. ♂

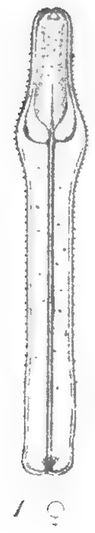
28. ♂


29. ♂


31. ♂

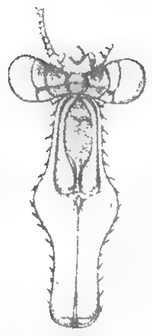
1, 2. CHOERADODIS SERVILLEI.
3. CHOERADODIS RHOMBICOLLIS.
4. STAGMOMANTIS MONTANA.
5, 6. STAGMOMANTIS MAYA.
7, 8. STAGMOMANTIS FRATERNA.
9. STAGMOMANTIS COERULANS.
10—12. PSEUDOMIOPTERYX INFUSCATA.
13—15. OLIGONYX MEXICANA.
16. MIONYX DOHRNIANA.
17. OLIGONYX BOLLIANA.
18—22. OLIGONYX STRIOLATA.
23—25. OLIGONYX PUNCTULATA.
26—31. OLIGONYX TESSELLATA.

Zehntner del. Vienna, Bannwarth Th. lit. imp.


1 ♀


2. ♀


3. ♀


4 ♂

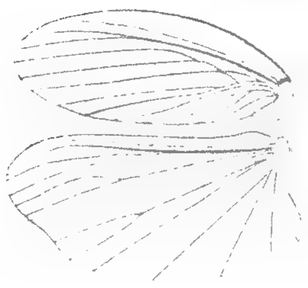

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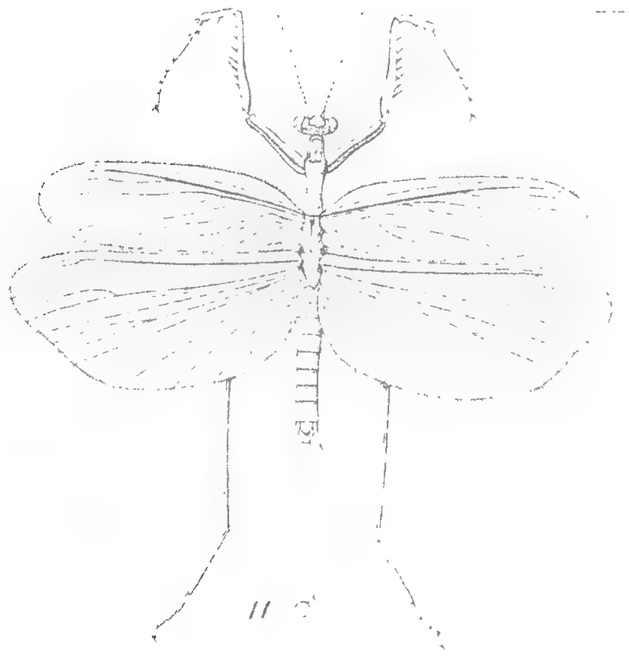

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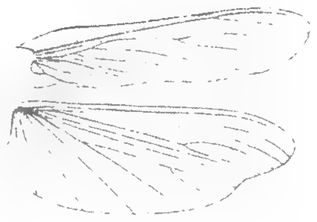

7 ♂


8 ♂


9 ♂


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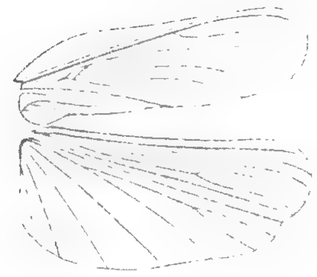

11 ♂


12 ♂


13 ♂


14 ♂


15.


16


17 ♀


18 ♀


19 ♀


20 ♀

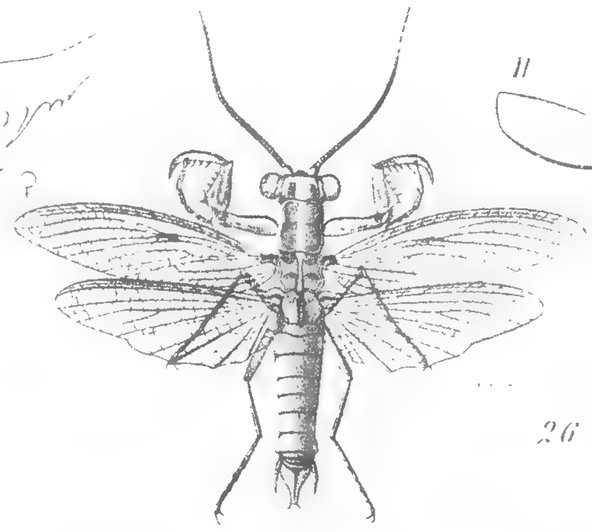

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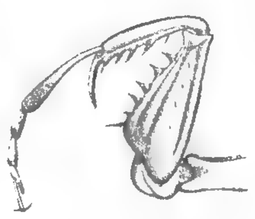

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23 ♀


24. ♀

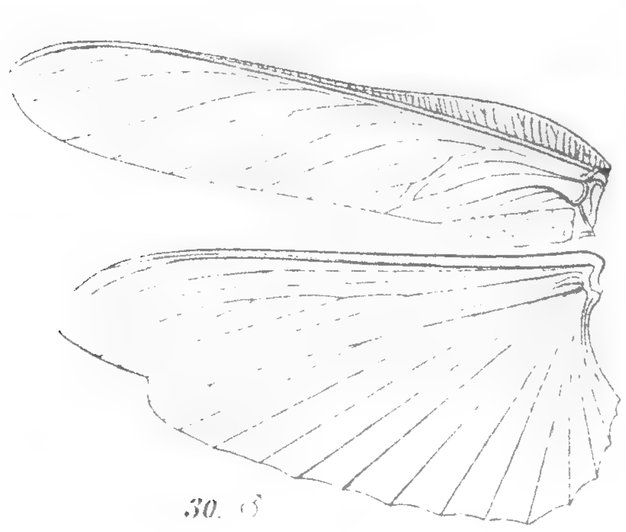

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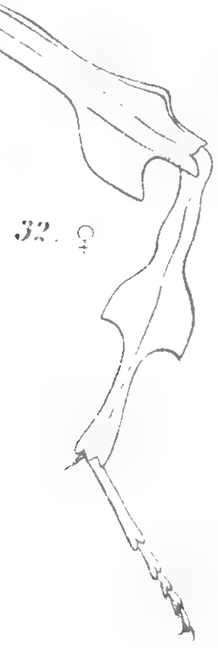

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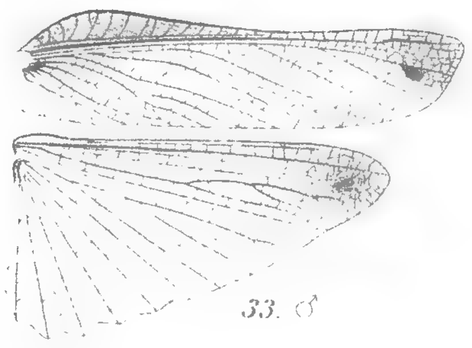

28. ♀


29 ♂


30. ♂


31. ♀


32. ♀


33. ♂

1—3. SPANIONYX BIDENS.
4—10. THRINACONYX FUMOSA.
11. THRINACONYX KIRSCHIANA.
12—14. MIONYX SAEVA.
15, 16. MIONYX FERA.
17—19. MUSONIA MAJOR.
20—21. MUSONIA FEMORATA.
22—25. MUSONIA RAPAX.
26, 27. MANTOIDA MAYA.
28, 29. VATES PARAENSIS.
30—32. VATES PECTINATA.
33. THEOCLYTES CHLOROPHAEA, VAR.

Zehntner del. Vienna, Bannwarth Th. lit. imp.

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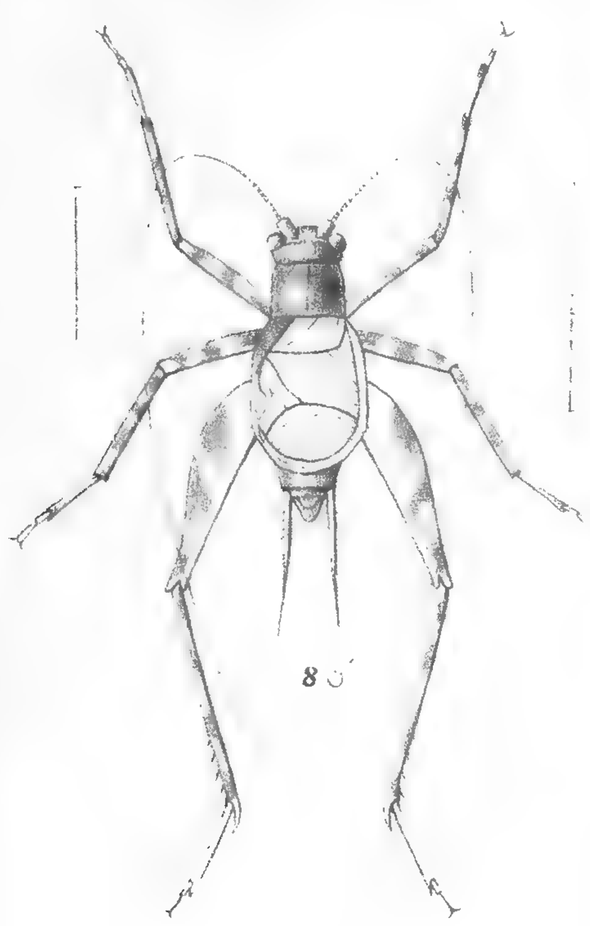
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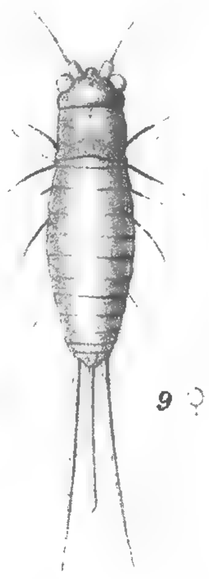
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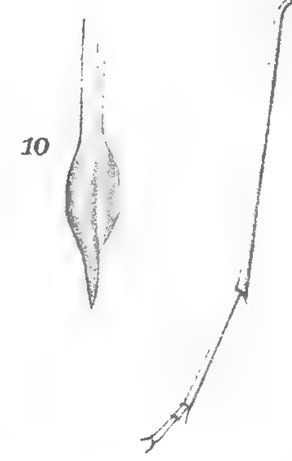
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6. TRIDACTYLUS INCERTUS.
7. TRIDACTYLUS APICALIS.
8-19. RHIPIPTERYX MEXICANA.
20. RHIPIPTERYX RIVULARIA.
21. RHIPIPTERYX BRULLEI.
22. RHIPIPTERYX CYANIPENNIS.
23. RHIPIPTERYX FORCEPS.
24. RHIPIPTERYX PULICARIA.
25. NEMOBIUS DENTICULATUS.
26. GRYLLUS ASSIMILIS.
27,28. GRYLLODES TOLTECUS.
29-34. GRYLLODES FORCIPATUS.
35,36. ECTATODERUS AZTECUS.
37. LIPHOPLUS MEXICANUS.
38,39. CYRTOXIPHUS AZTECUS.
40. CYRTOXIPHUS TIBIALIS.
41. CYRTOXIPHUS CHAMPIONI.
42,43. CYRTOXIPHUS OLMECUS.
44. CYRTOXIPHUS TOLTECUS.
45. CYRTOXIPHUS MACILENTUS.

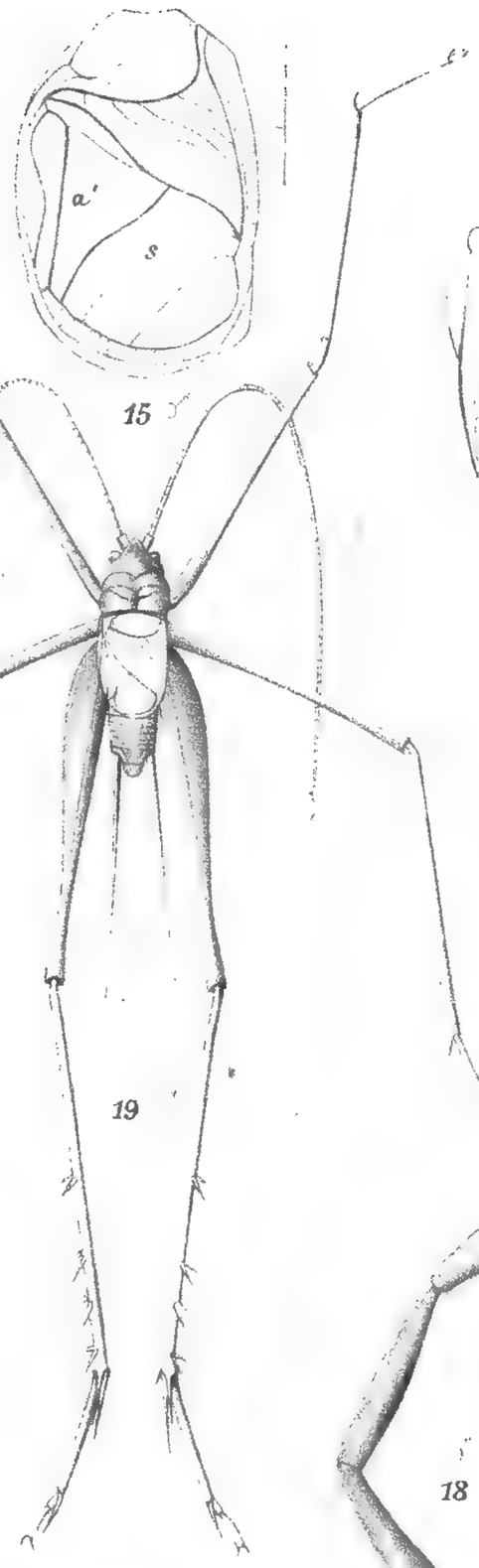
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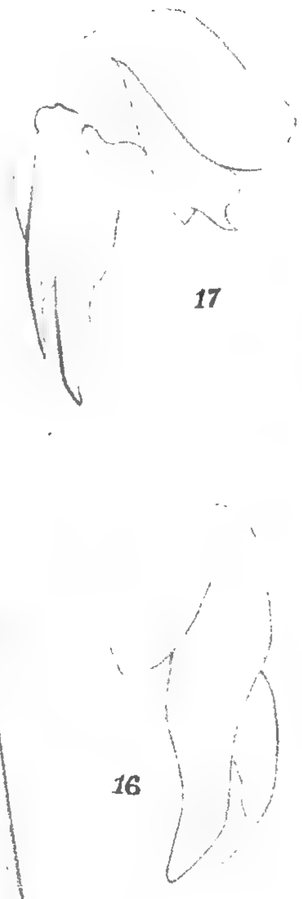
Th.Bannwarth, lith.et imp. Vienna.

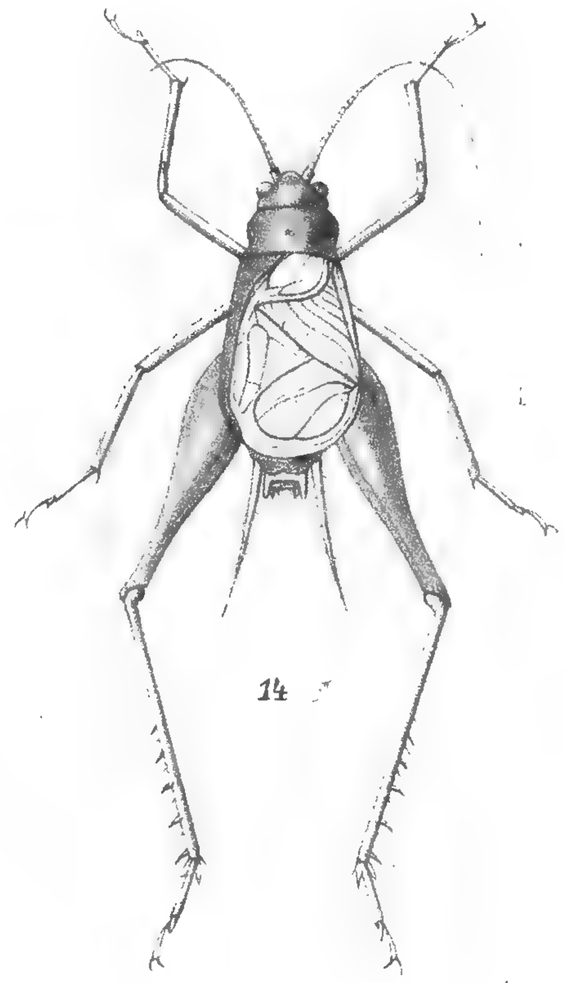

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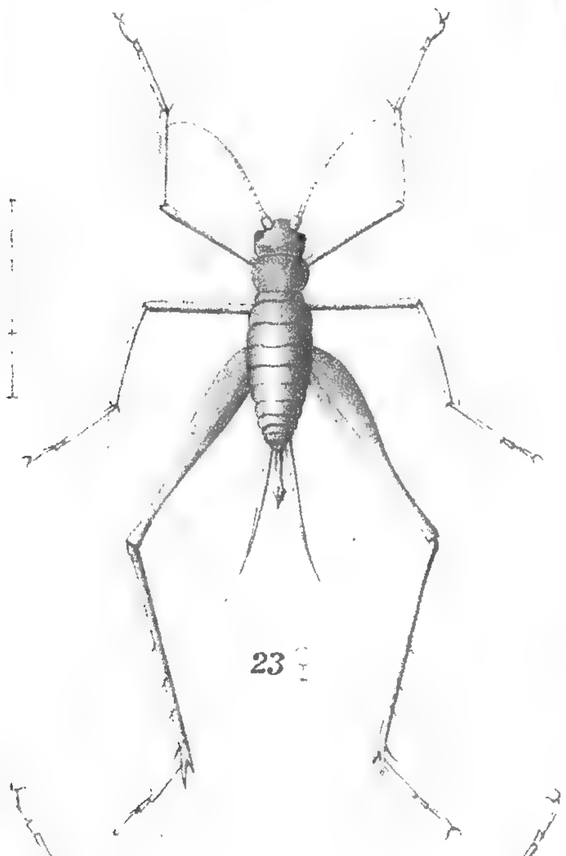

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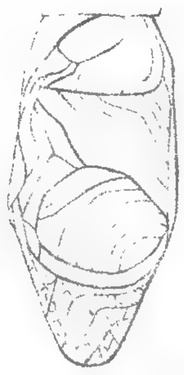

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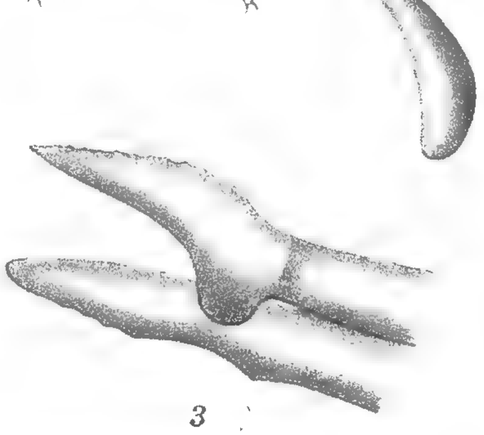

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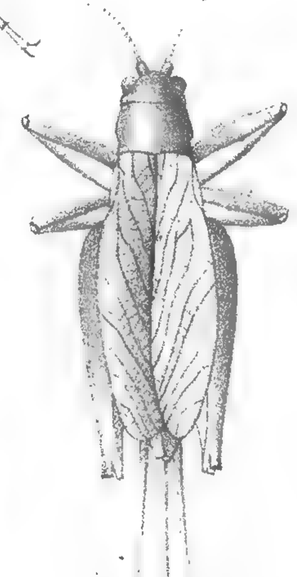

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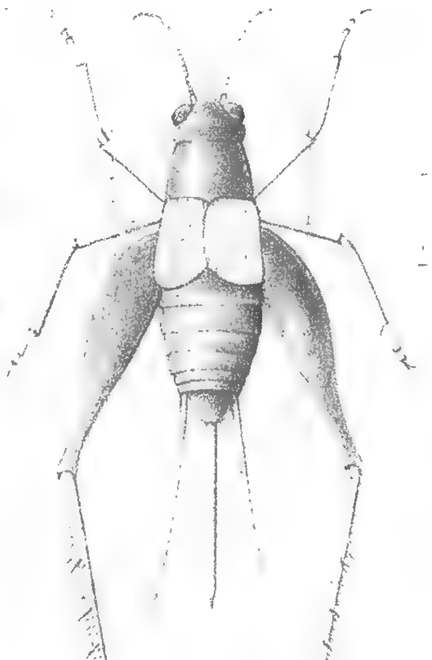

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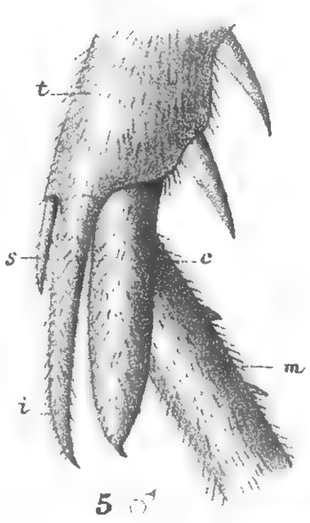

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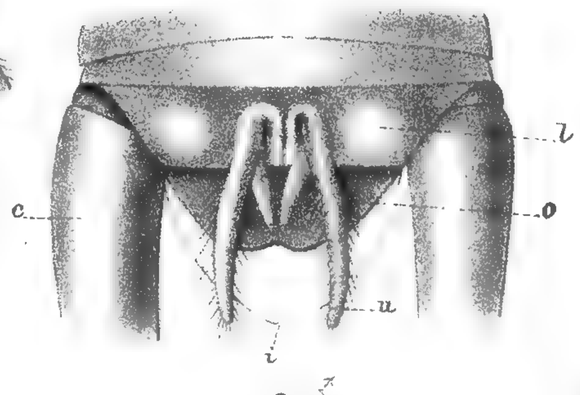

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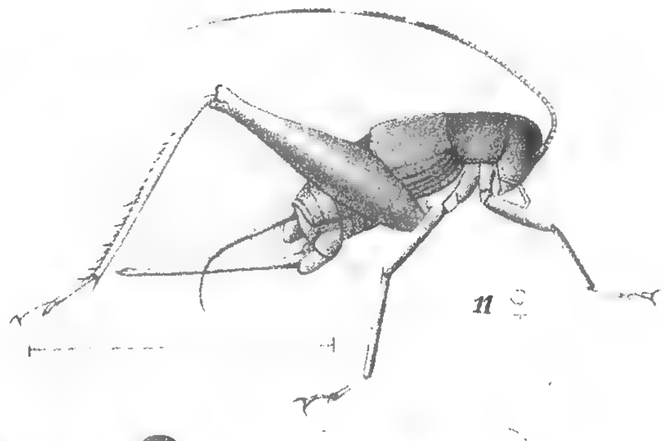




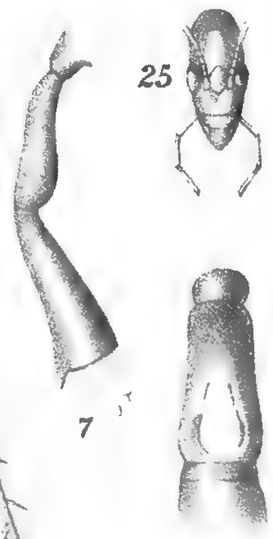
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5 ♂

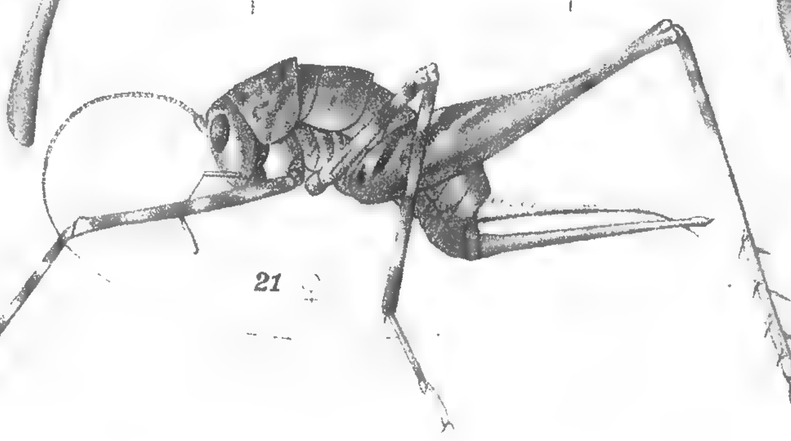

6 ♂


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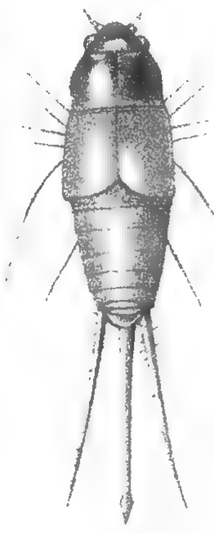

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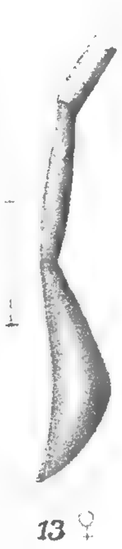

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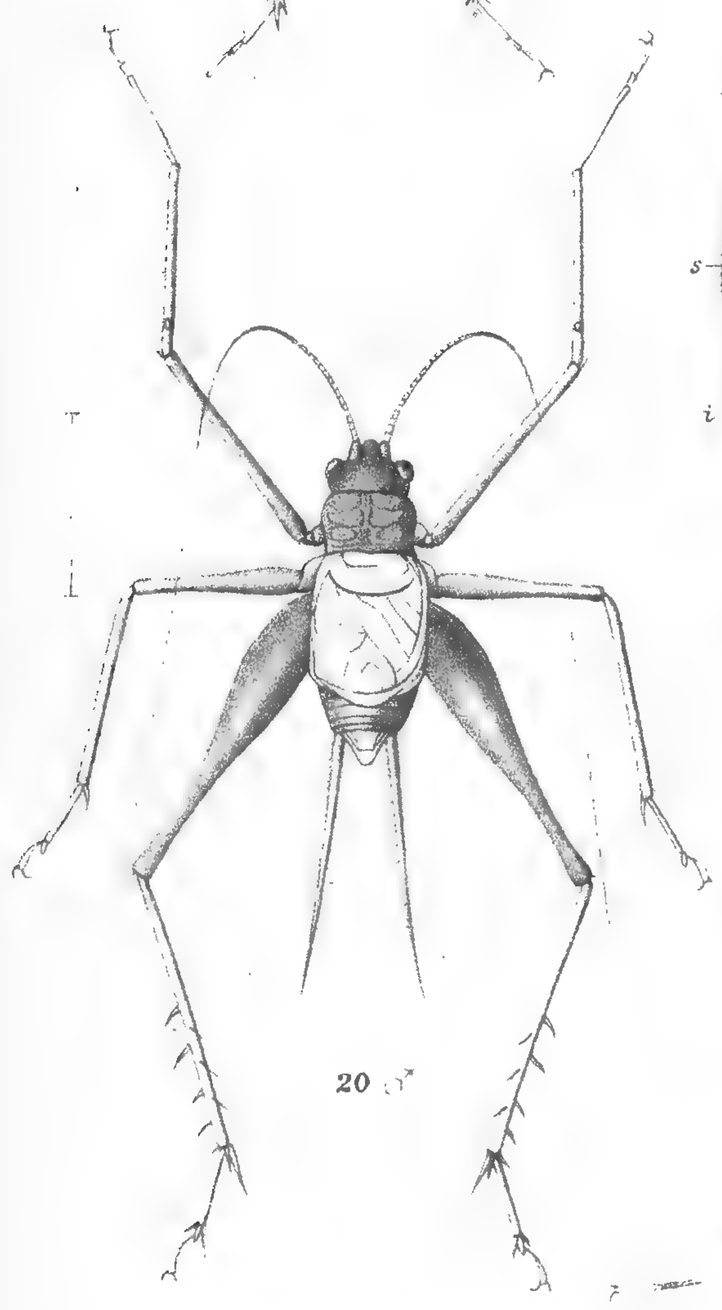
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21 ♀

24


12 ♀

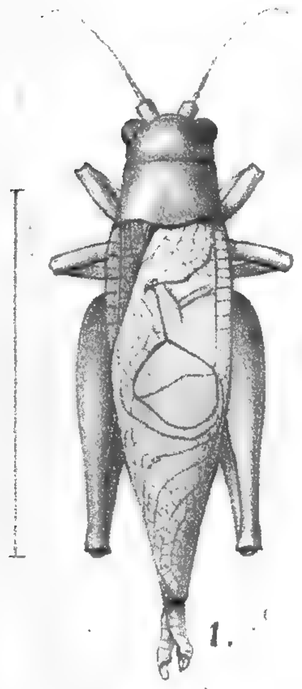

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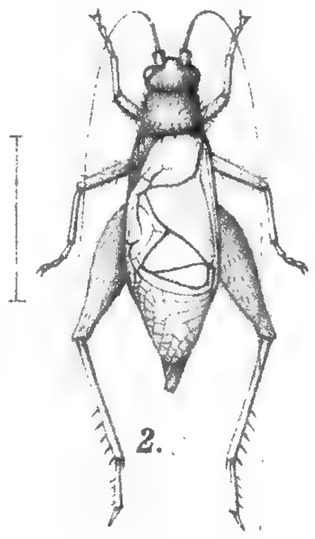

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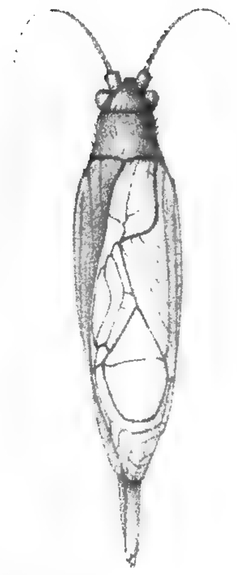
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2-7. PARAGRYLLUS TEMULENTUS.
8-10. ECTECOUS CANTANS.
11-13. AMUSUS MEXICANUS.
14-17. AMPHIACUSTES TOLTECUS.
18. AMPHIACUSTES AZTECUS.
19. AMPHIACUSTES PHALANGIUM.
20-22 ENDACUSTES AZTECUS.
23. ARACHNOPSIS CAVICOLA.
24 25. OECANTHUS VARICORNIS.

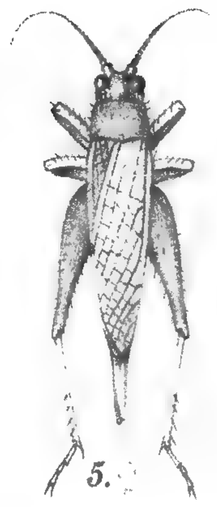
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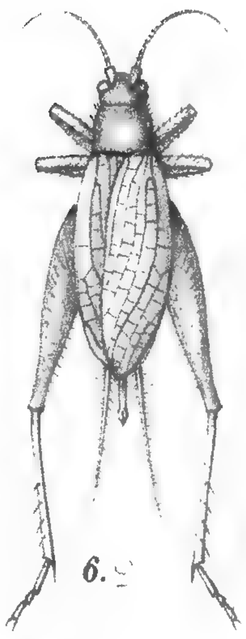
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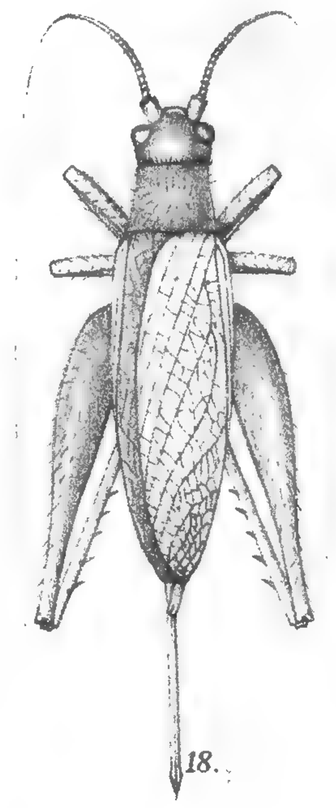

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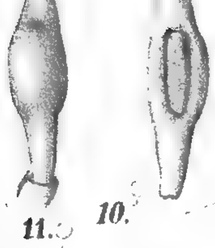

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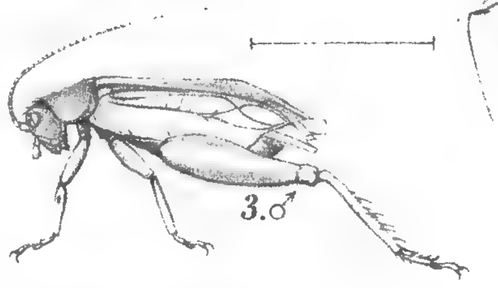

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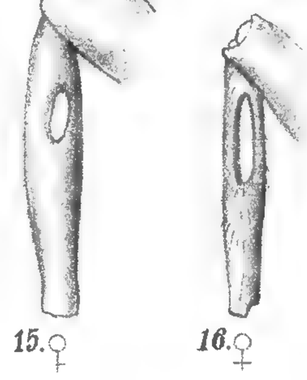

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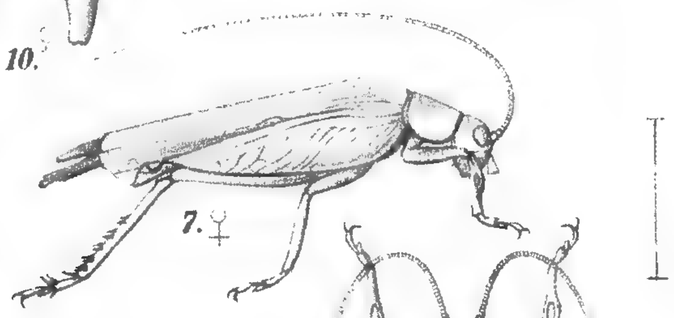

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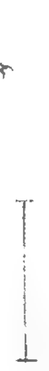

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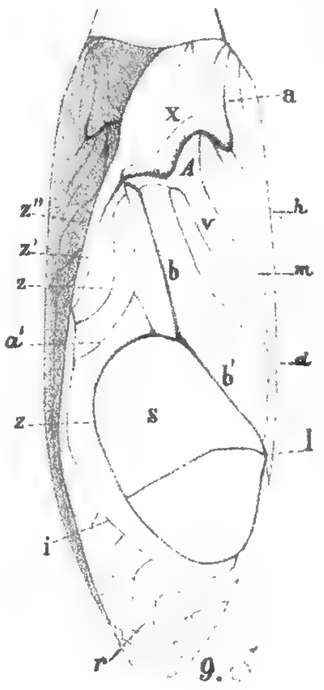
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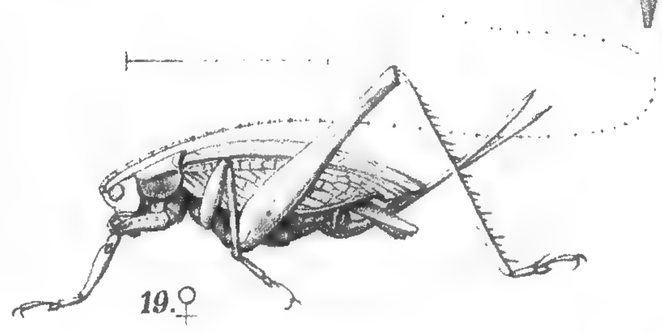

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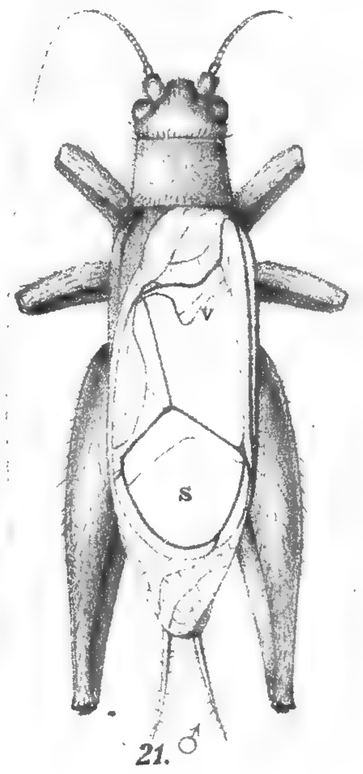

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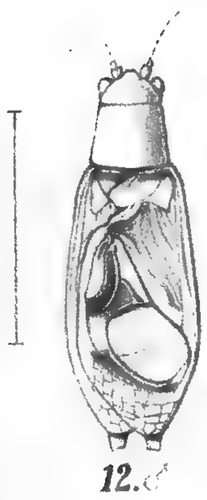

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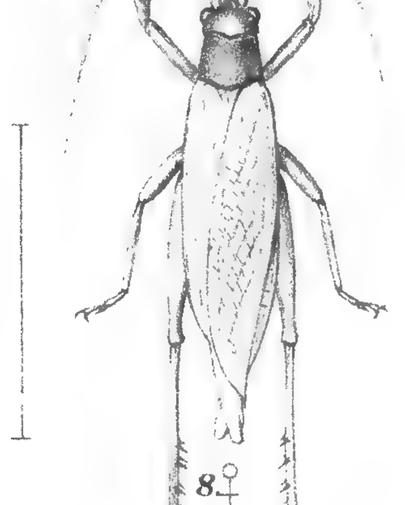



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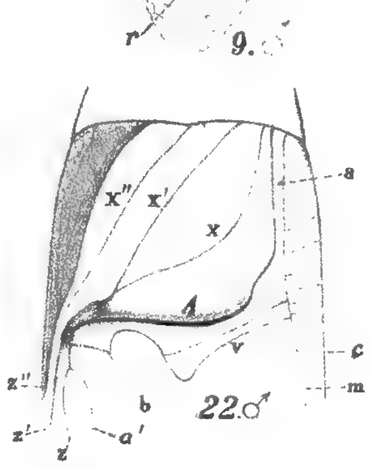

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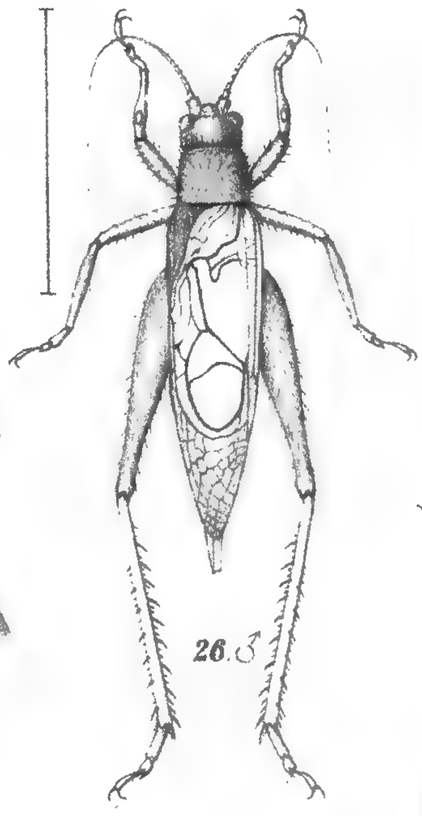

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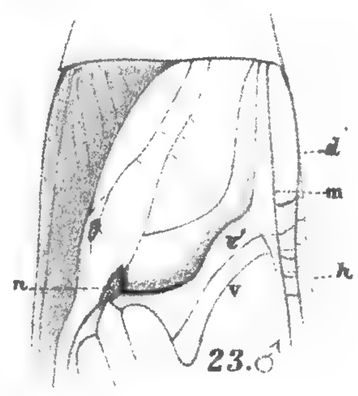

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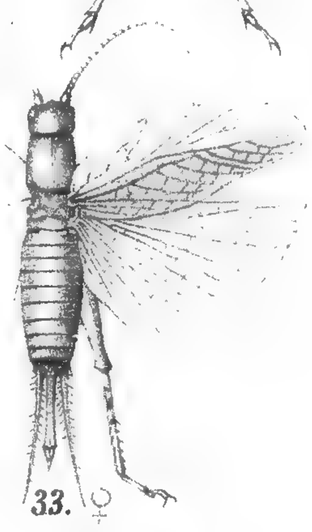

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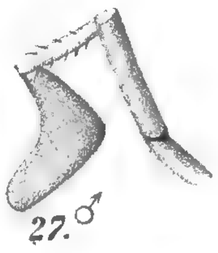

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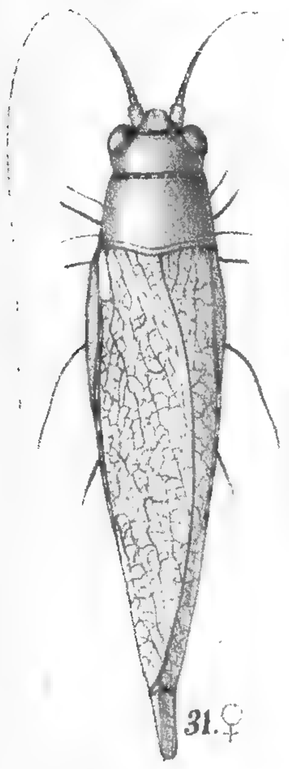

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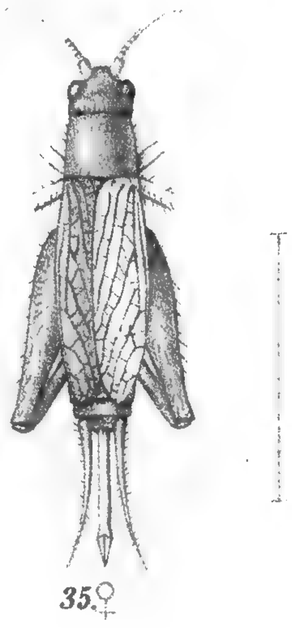

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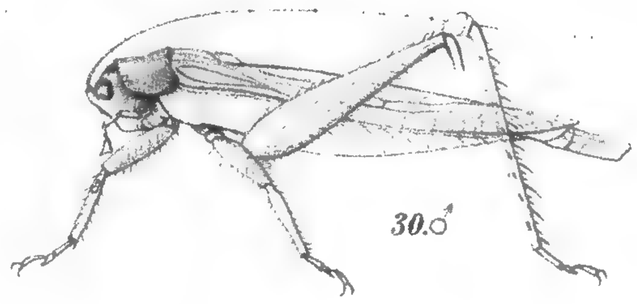

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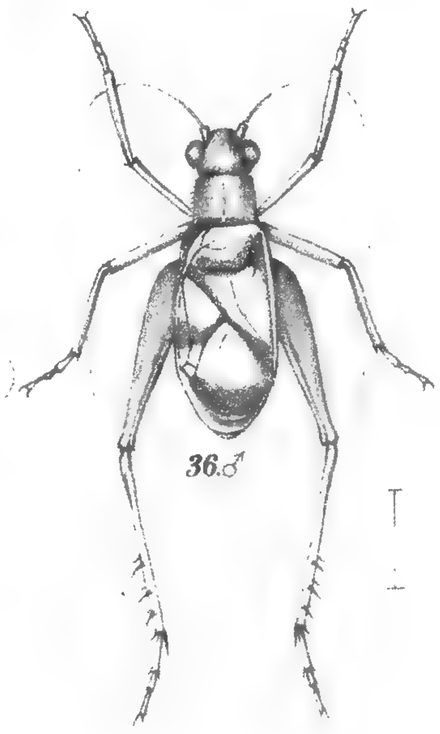

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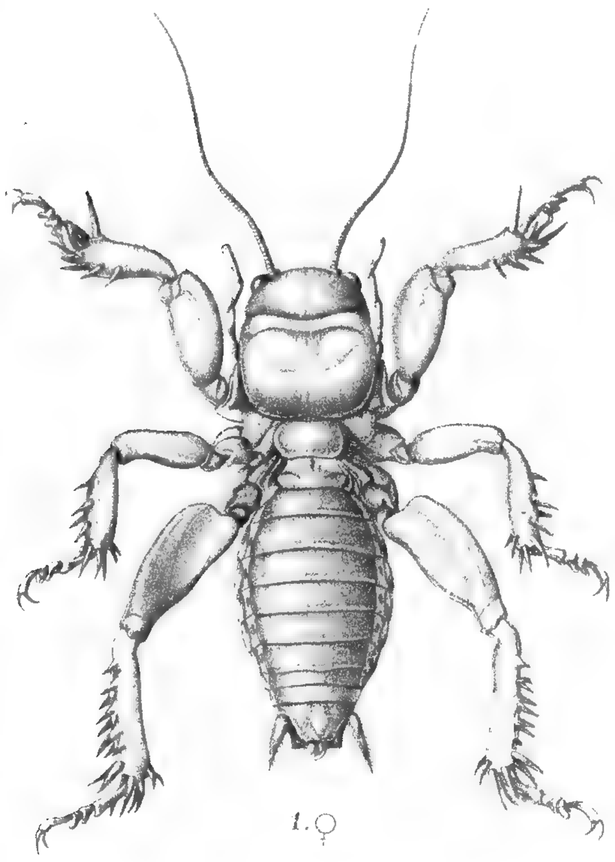

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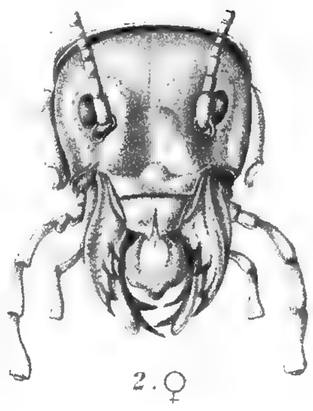

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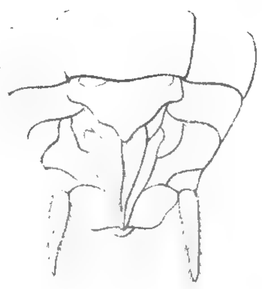
1. PHYLLOGRYLLUS PIPILANS.
2,3. DIATRYPUS CHAMPIONI.
4. DIATRYPUS JANSONI.
5. DIATRYPUS TOLTECUS.
6. DIATRYPUS APITHOIDES.
7-11. PAROECANTHUS PODAGROSUS.
12,13. PAROECANTHUS SULCATUS.
14,15. PAROECANTHUS TIBIALIS.
16,17. PAROECANTHUS OLMECUS.
18-20. APITHES MONTANUS.
21. APITHES AZTECUS.
22. OROCHARIS GRYLLODES.
23,24. OROCHARIS CAYENNENSIS.
25. OROCHARIS TIBIALIS.
26. OROCHARIS GAUMERI.
27. OROCHARIS MAXILLARIS.
28. OROCHARIS AMUSUS.
29,30. OROCHIRUS CORRUGATUS.
31,32. APHONUS FLAVIFRONS.
33,34. HETERECOÜS AUDITOR.
35. HETERECOÜS SMITHIANUS.
36. THAMNOSCIRTUS MONTANUS.

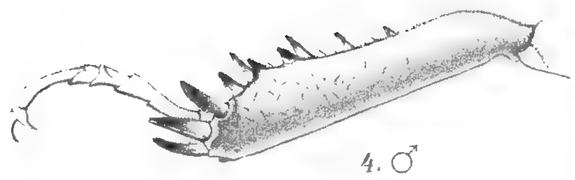
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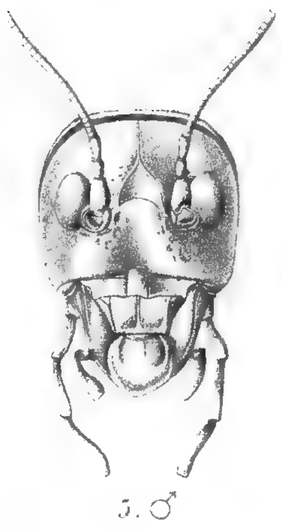
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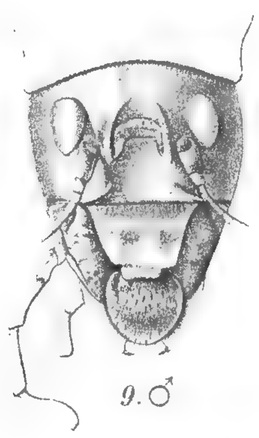

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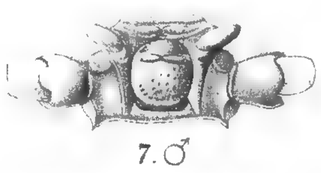

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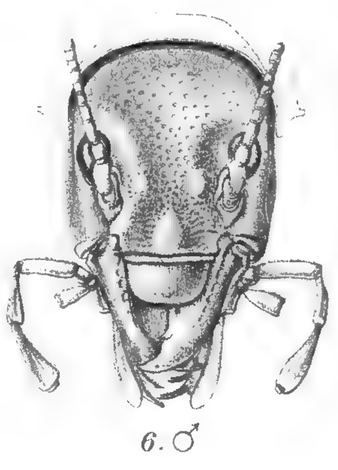

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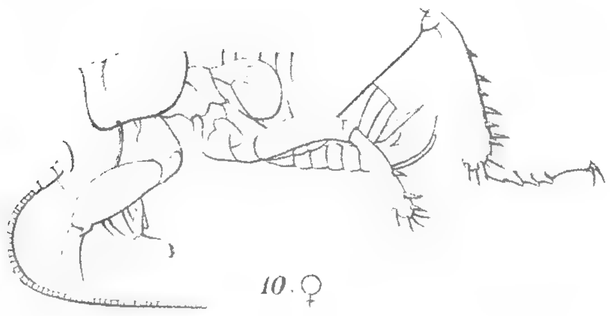

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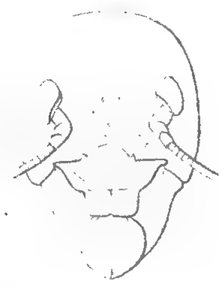

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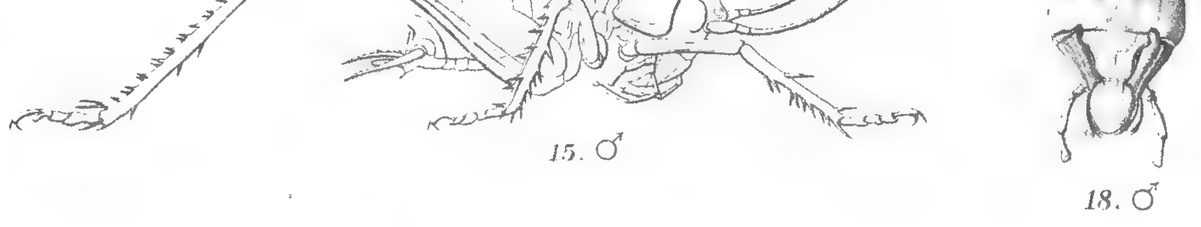

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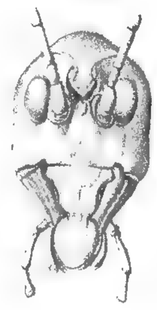

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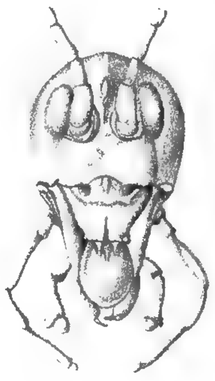

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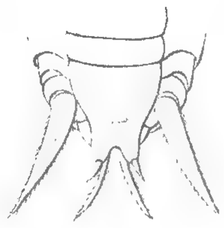

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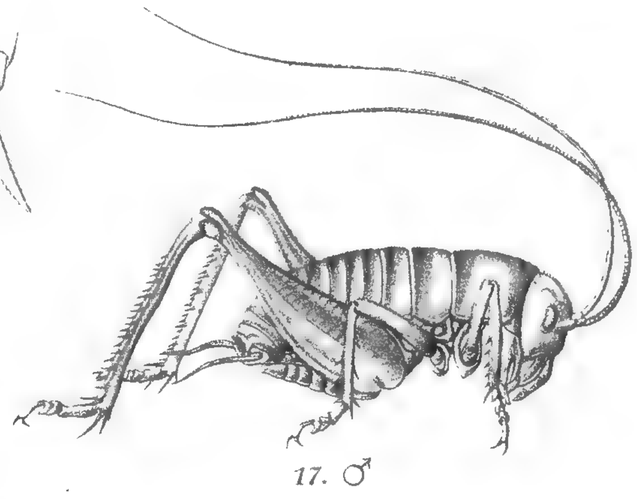

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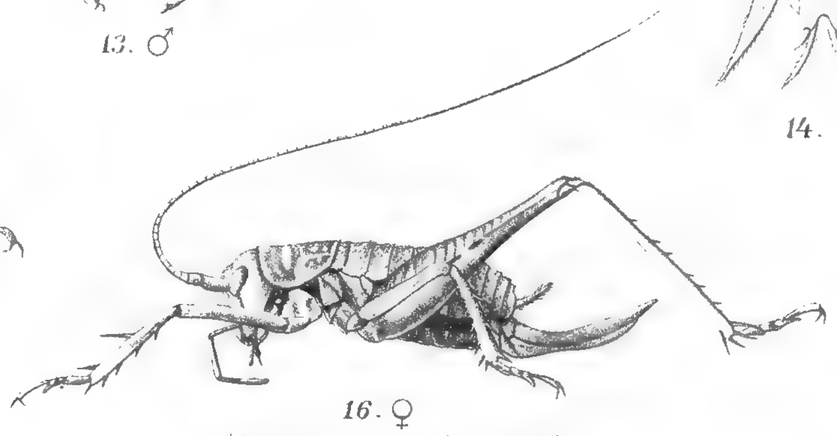

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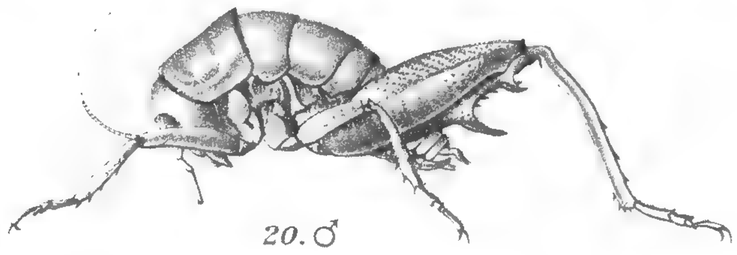

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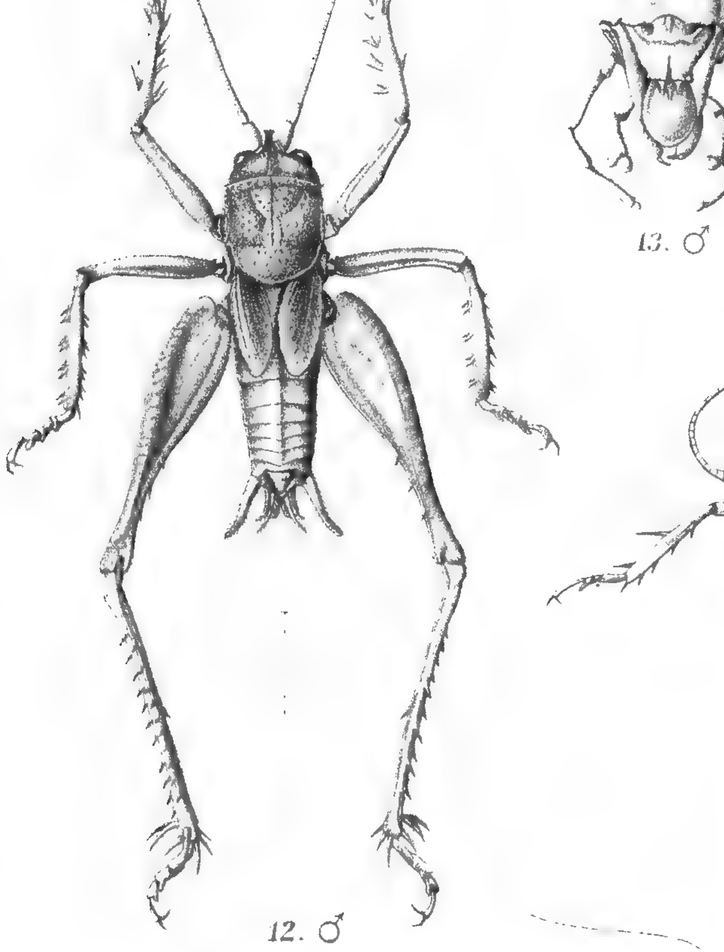

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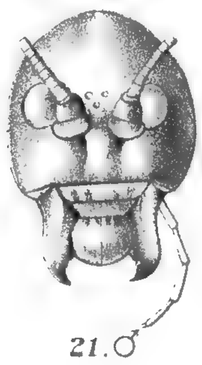

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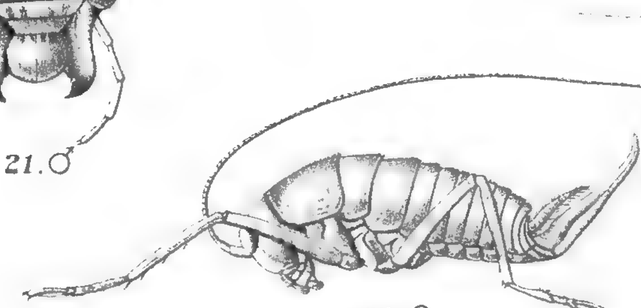

17. ♂


16. ♀


20. ♂


12. ♂


21. ♂

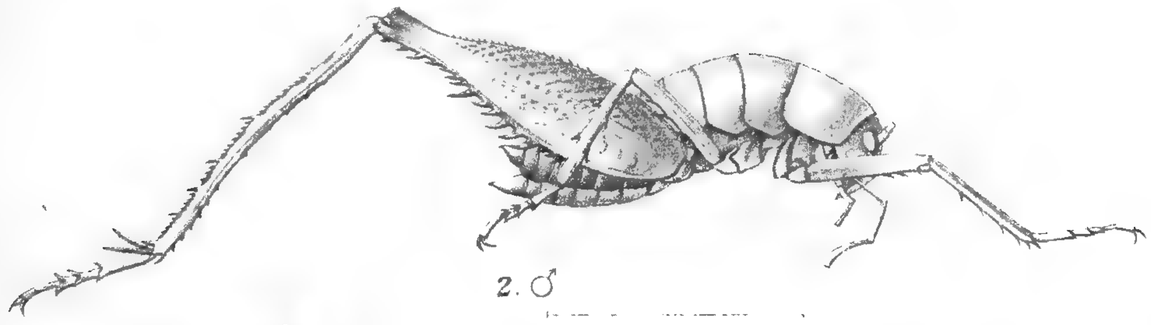

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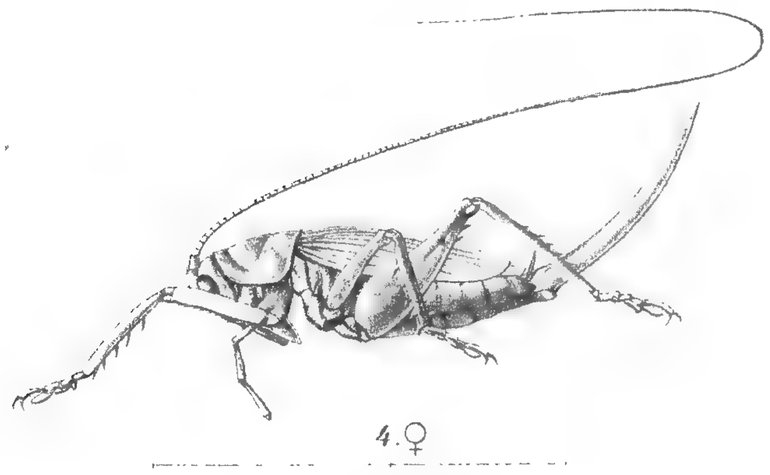

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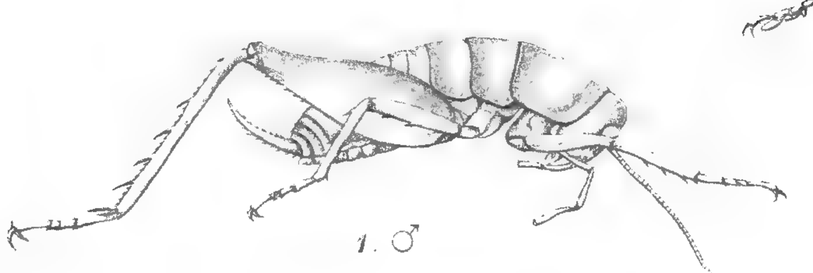
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4. STENOPELMATUS HYDROCEPHALUS.
5. STENOPELMATUS HISTRIO.
6, 7. STENOPELMATUS NIETI.
8, 9. STENOPELMATUS ATER.
10, 11. STENOPELMATUS SALLEI.
12—15. SCHOENOBATES MEXICANUS.
16. SCHOENOBATES SALTATOR.
17, 18. GLAPHYROSOMA MEXICANA.
19. GLAPHYROSOMA AZTECA.
20—22. PHOBEROPUS CHAMPIONI
23. CEUTOPHILUS AZTECUS.

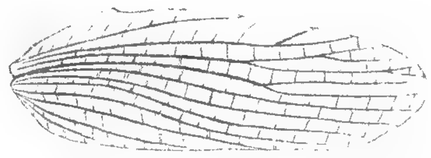
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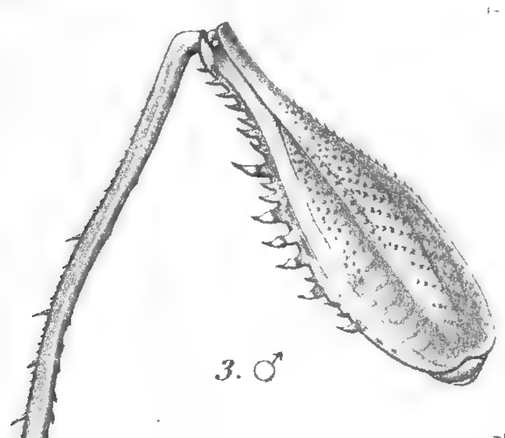
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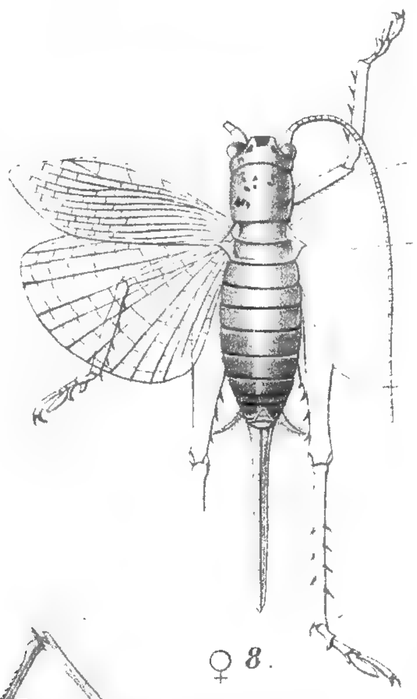

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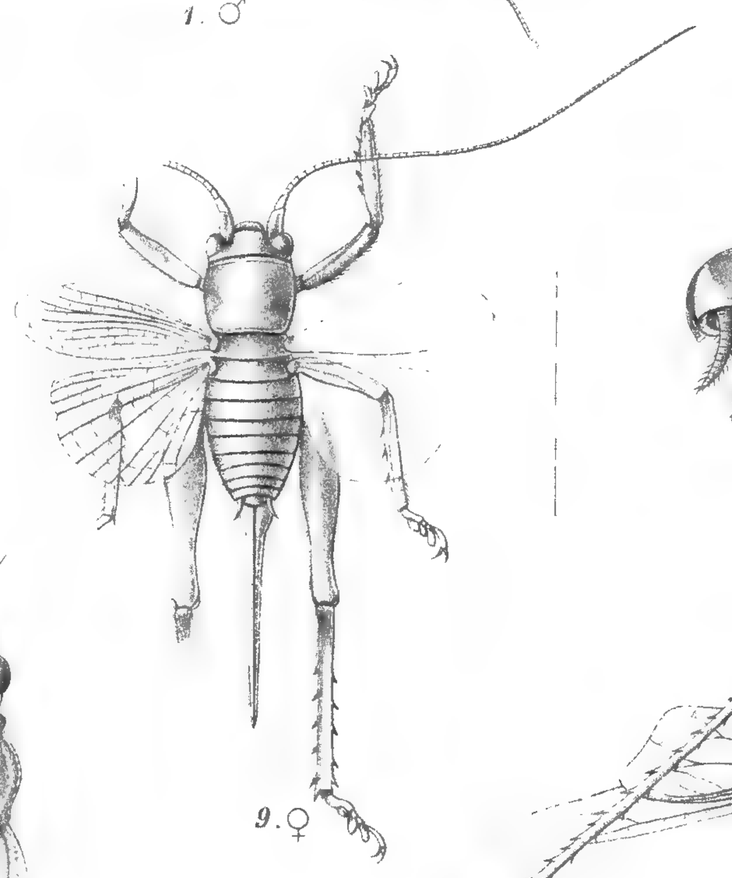

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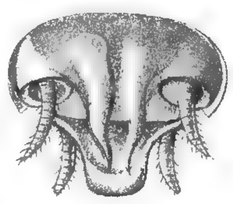

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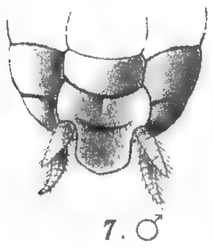

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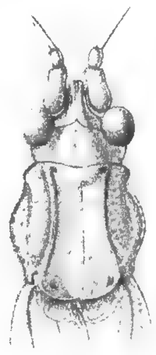

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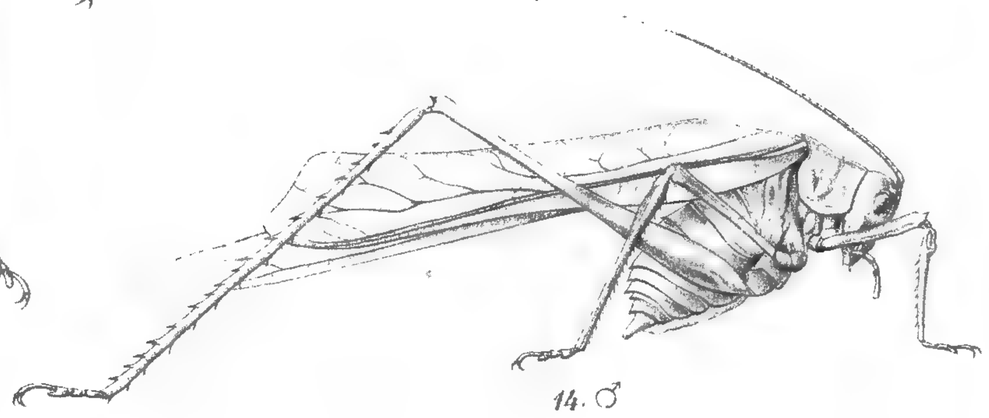

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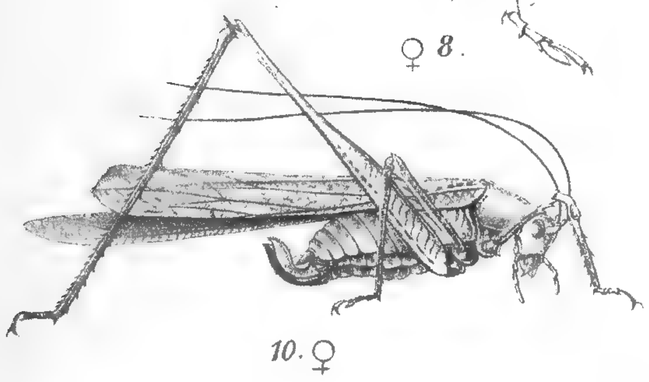

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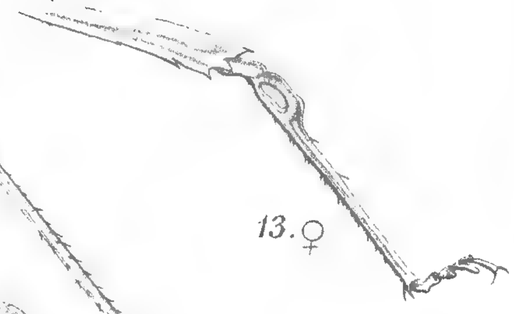

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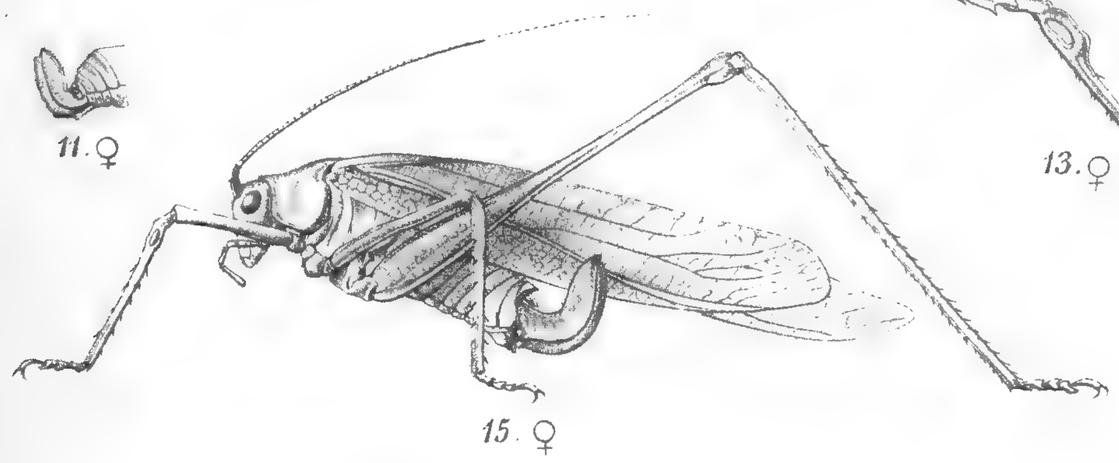

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14. ♂


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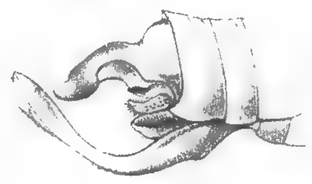

13. ♀

11. ♀


15. ♀


17. ♂


18. ♂


19. ♂


20. ♂


21. ♂

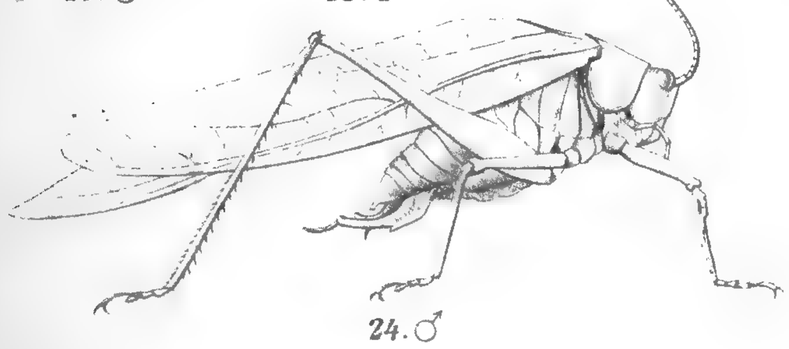

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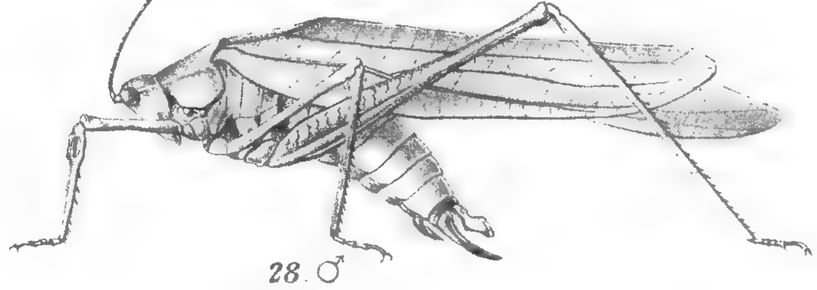

25. ♂


16. ♂


23. ♂


24. ♂


27. ♂

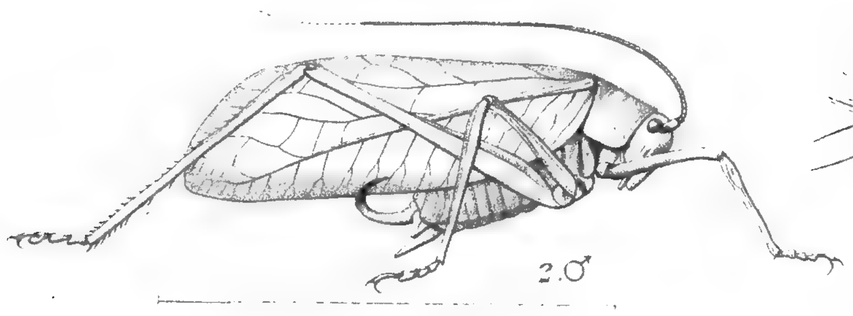

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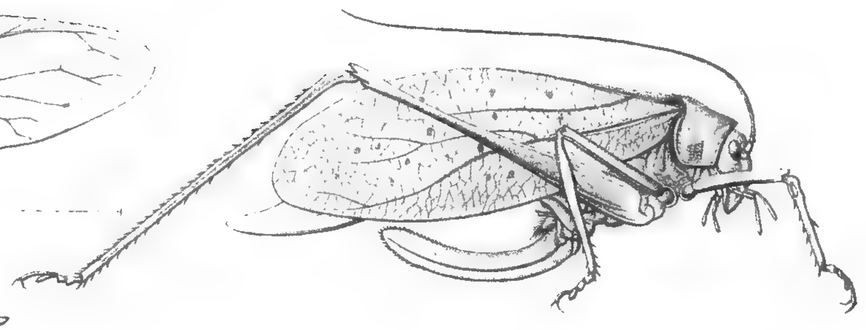
1. HEMIUDEOPSYLLA FORRERIANA.
2, 3. ARGYRTES MEXICANA.
4-7. GRYLLACRIS ABLUTA.
8. GRYLLACRIS PICTA.
9. GRYLLACRIS CYCLOPS.
10-13. HORMILIA TOLTECA.
14. HORMILIA PRASINA.
15. SCUDDERIA LATICAUDA.
16,17. SCUDDERIA FURCATA.
18,19. SCUDDERIA TEXENSIS.
20. SCUDDERIA CURVICAUDA.
21. SCUDDERIA FURCULATA.
22, 23. SCUDDERIA FORCIPATA.
24-27. CHLOROSCIRTUS FORCEPS.
28, 29. ECTEMNA MEXICANA.

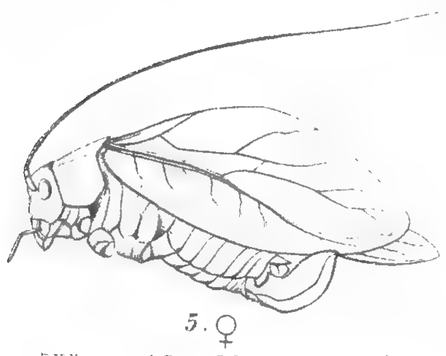
Lunel et Tschudi del.

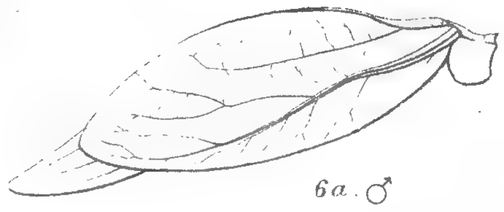
Th.Bannwarth, lith.et imp. Vienna.


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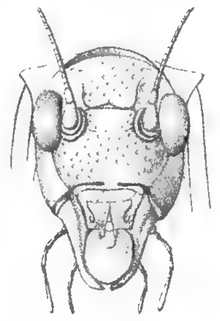

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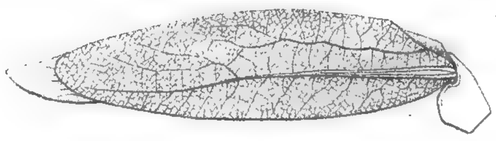

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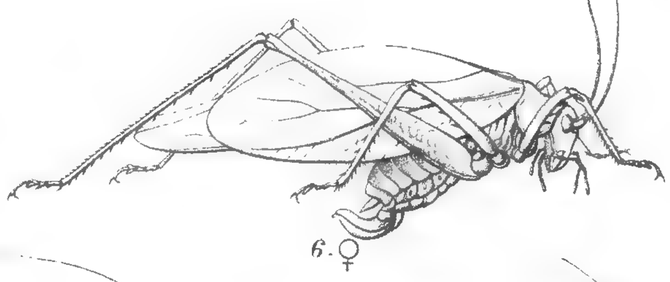

5.♀


6a.♂

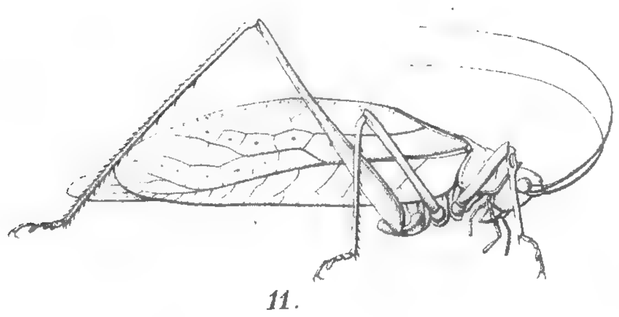

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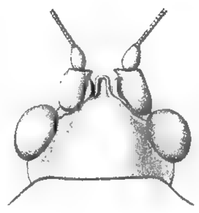

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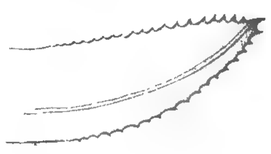

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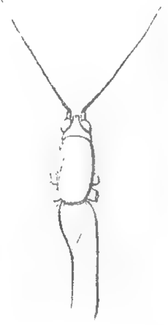

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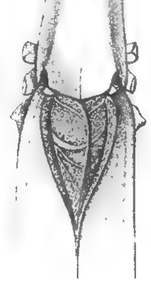

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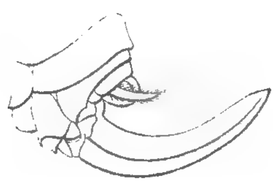

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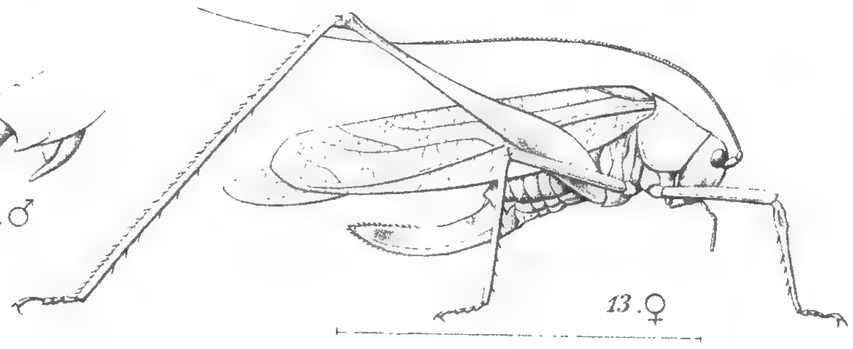

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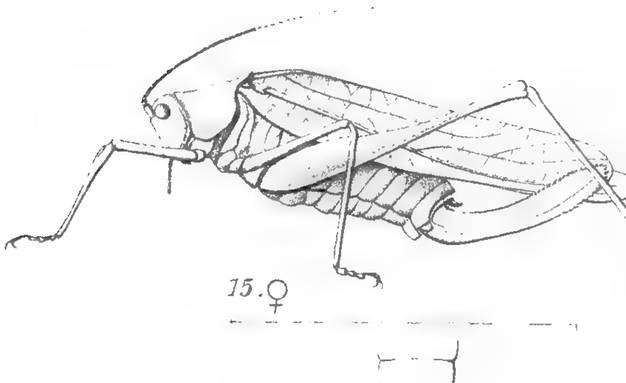

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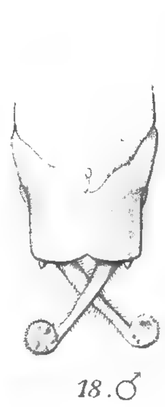

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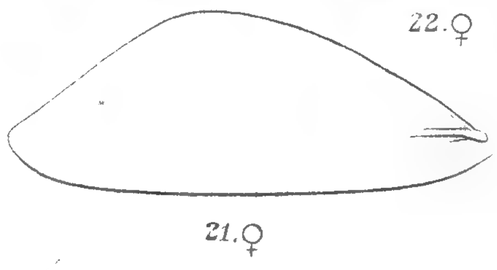

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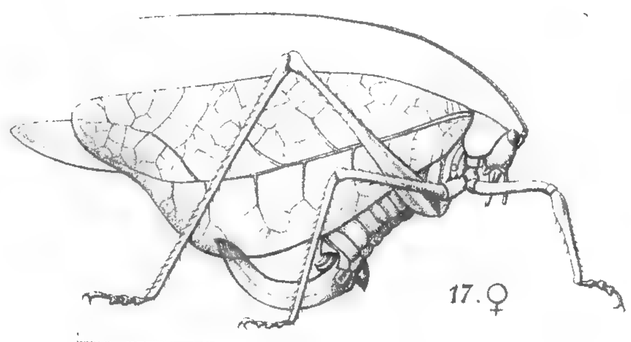

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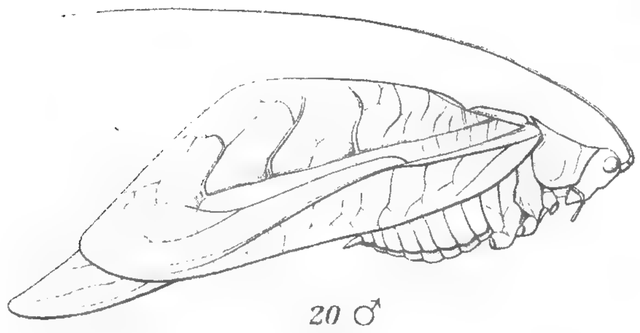
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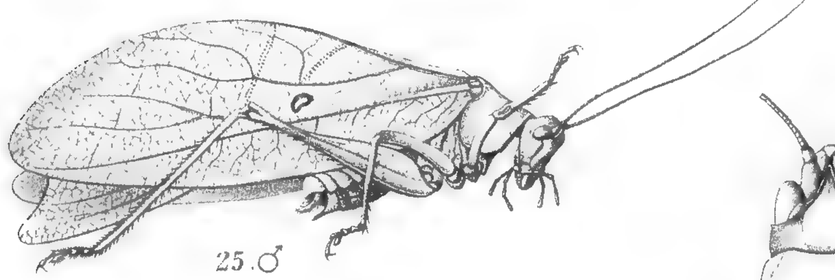

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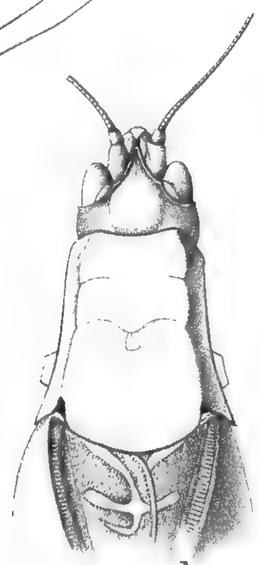
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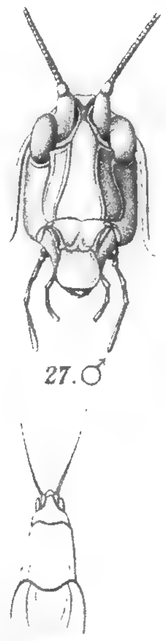

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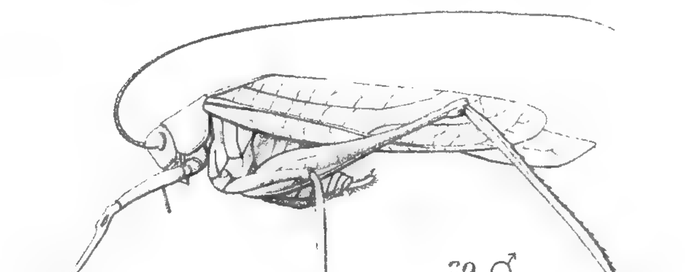

20♂


25.♂


26.♂


27.♂

26a


29.♂

28.♀

30.♂

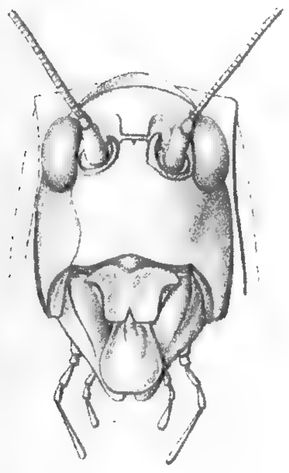
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2. PHRIXA MAYA.
3. AMBLYCORYPHA GUATEMALAE.
4. AMBLYCORYPHA HUASTECA.
5. PARAGENES OVATA.
6. PARAGENES MEXICANA.

7 10. ANAULACOMERA ANGUSTIFOLIA.
11, 12. ANAULACOMERA ERINIFOLIA.
13. ANAULACOMERA RECTICAUDA.
14. ANAULACOMERA LATICAUDA.
15, 16. ANAULACOMERA DENTICAUDA.

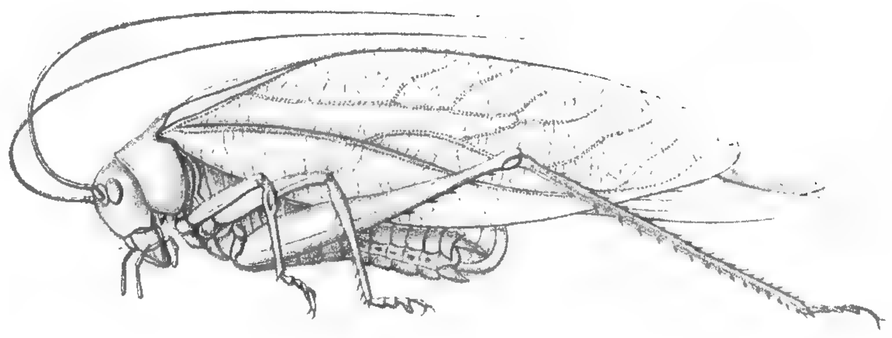
17—19. CTENOPHLEBIA AZTECA.
20—24. HYPERPHRONA TRIMACULATA.
25—27. PHYLLOPTERA PISIFOLIA.
28. PHYLLOPTERA DIMIDIATA.
29. TURPILIA OBLONGOCULATA.
30. MICROCENTRUM CHAMPIONI.

Tschudi del.

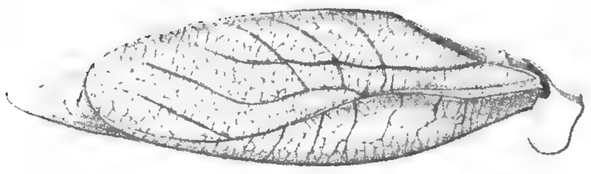
Th.Bannwarth.lith.et imp.Vienna.



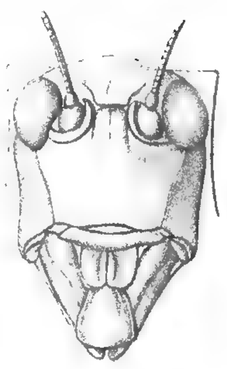
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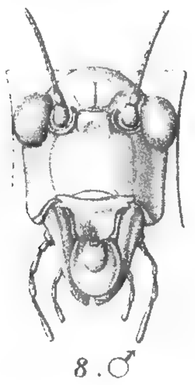
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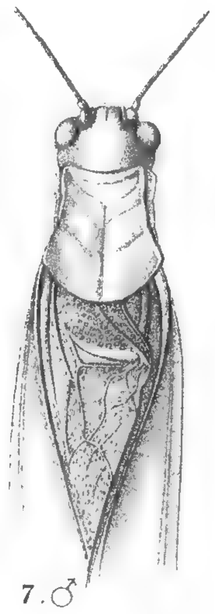
6. ♀



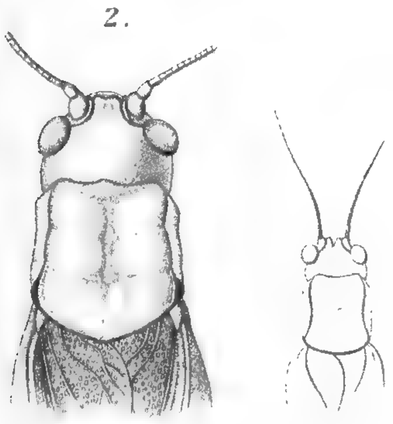
5. ♀



8. ♂

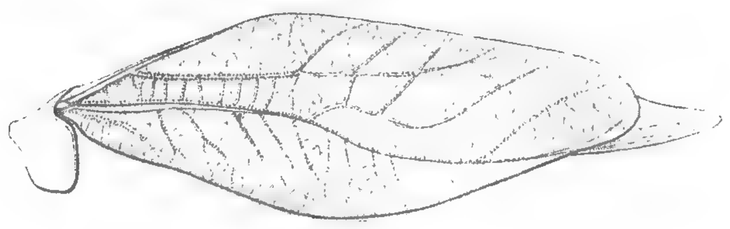


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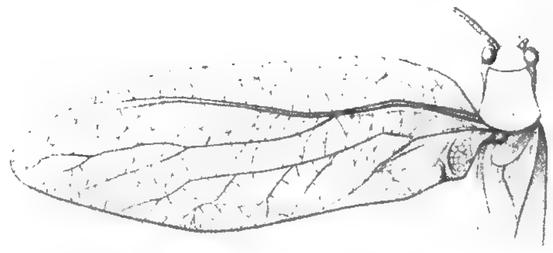


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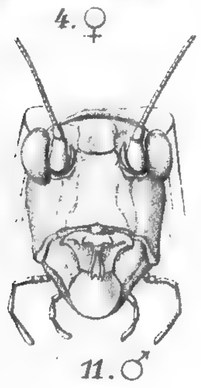
4a



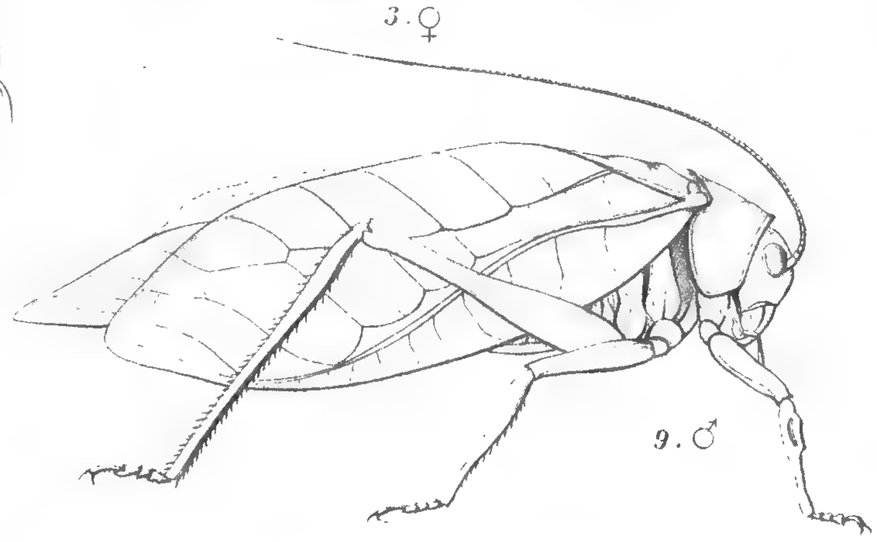
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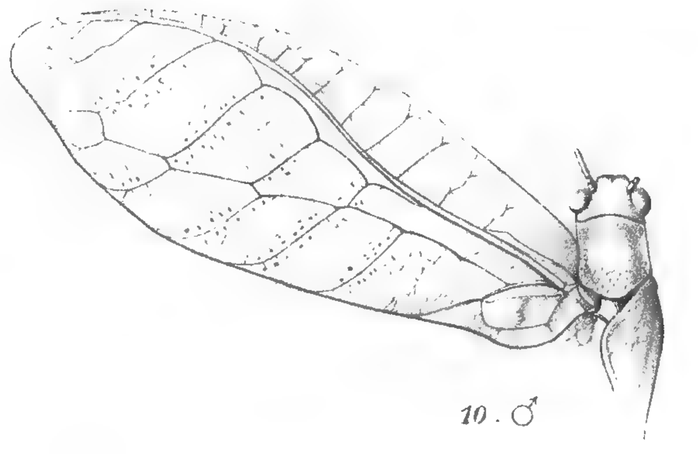
13. ♂



11. ♂



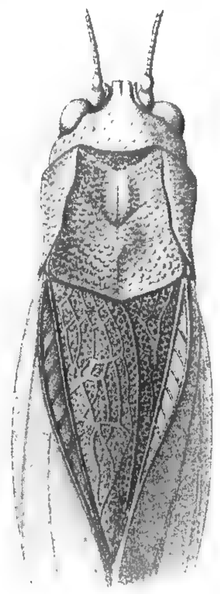
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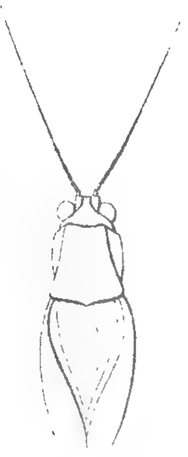
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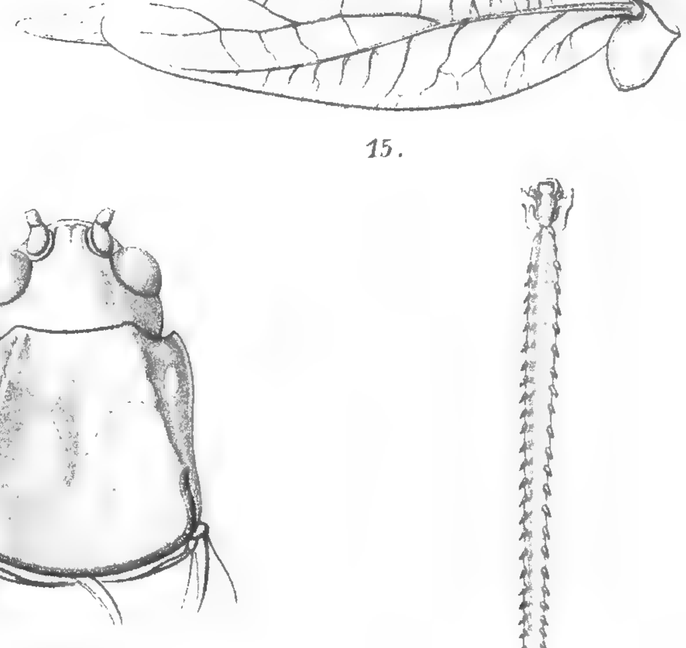
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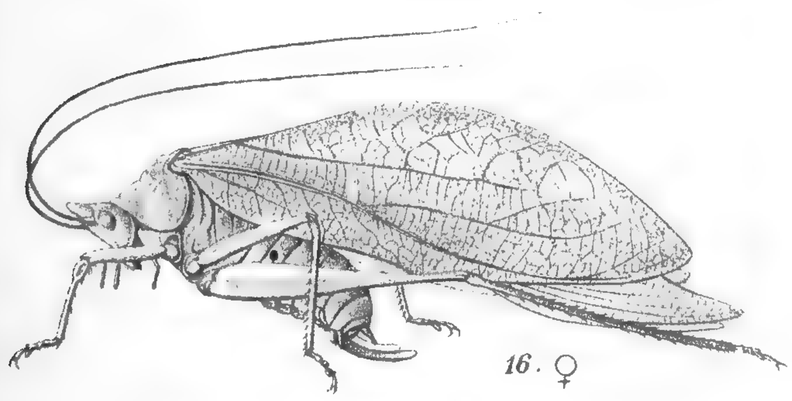
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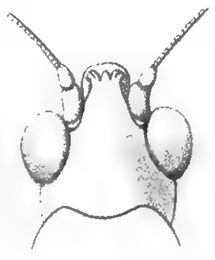
14a



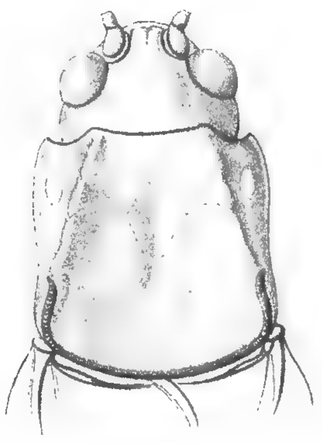
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16. ♀



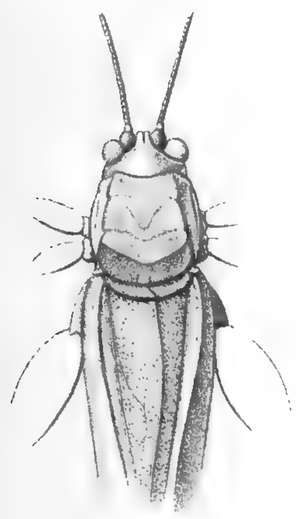
17. ♀



23. ♀



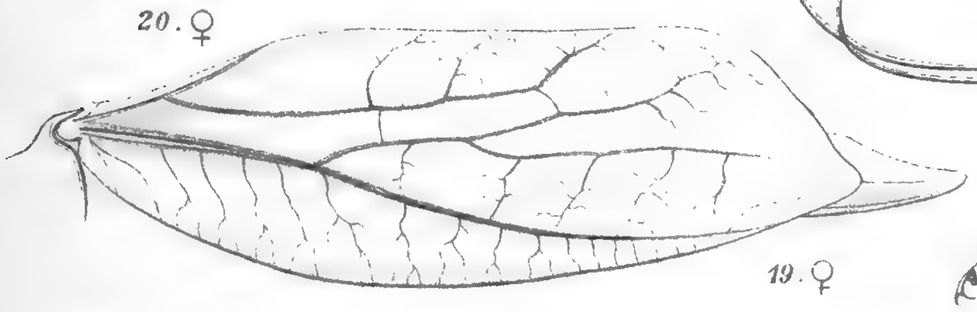
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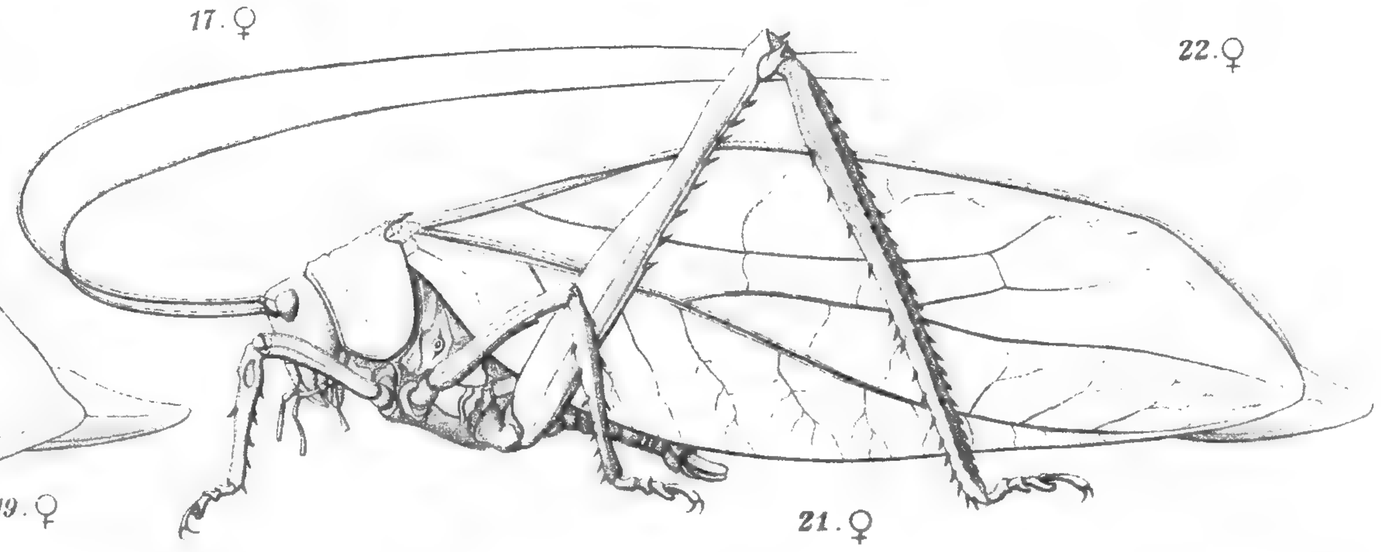
20. ♀



18. ♀



19. ♀

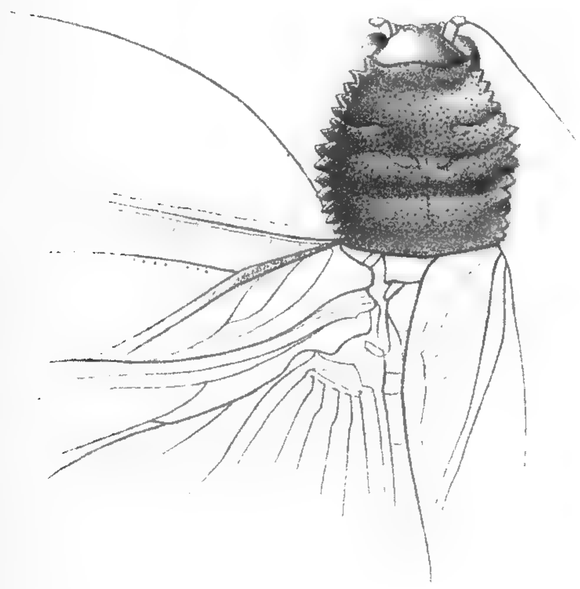


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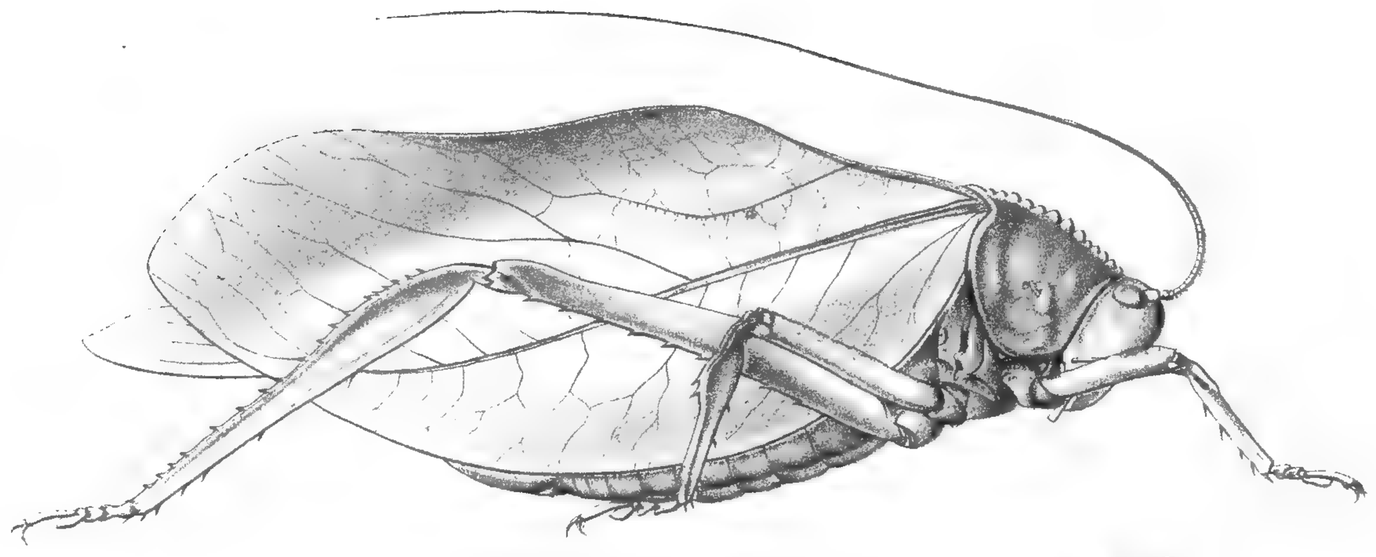
1, 2. MICROCENTRUM LANCEOLATUM.
3 – 5. MICROCENTRUM LAURIFOLIUM.
6 – 8. MICROCENTRUM RETINERVIS.
9, 10. MICROCENTRUM COLOSSEUM.
11, 12. MICROCENTRUM OTOMIUM.
13. MICROCENTRUM AZTECUM.
14, 15. SYNTECHNA TARASCA.
16 – 18. PETALOPTERA ZENDALA.
19, 20. STILPNOCHLORA TOLTECA.
21 – 23. STILPNOCHLORA AZTECA.

Nicolet del.

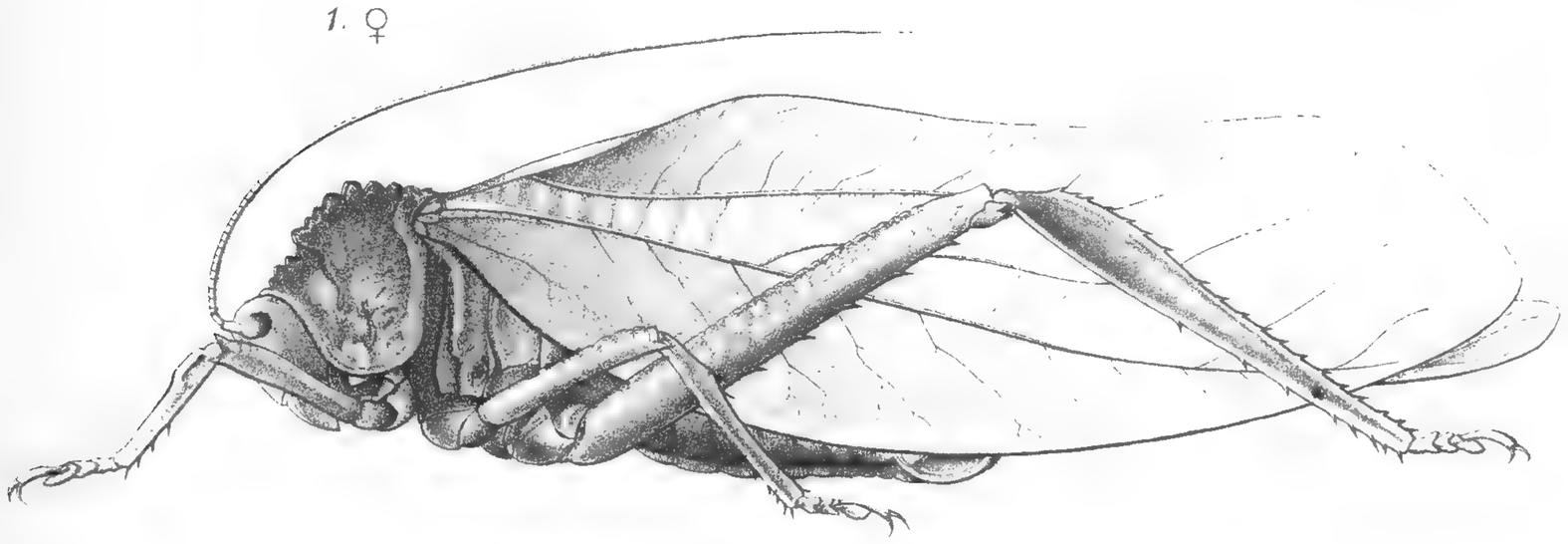
Th. Bannwarth, lith. et imp. Vienna.



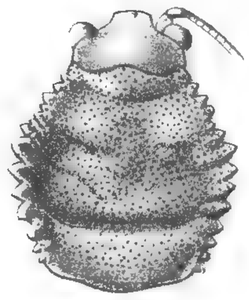
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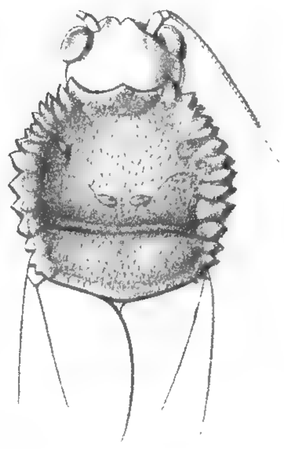
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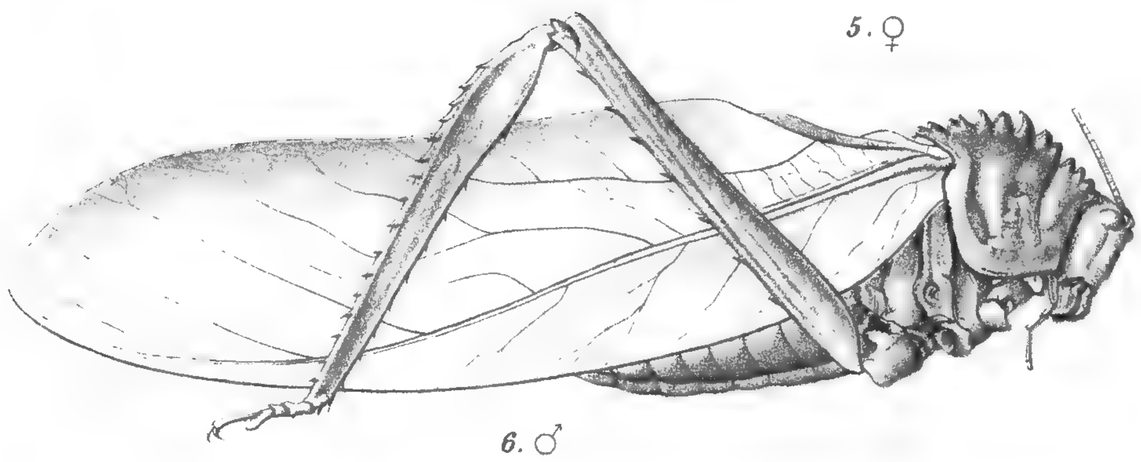
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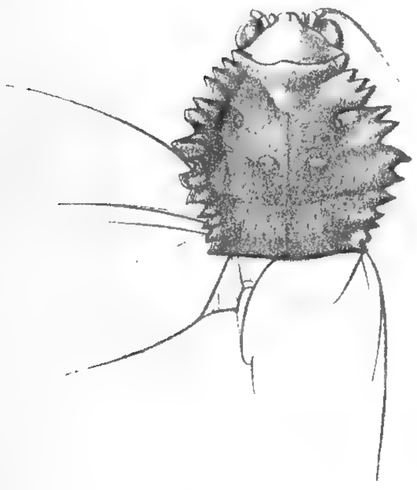
4. ♂



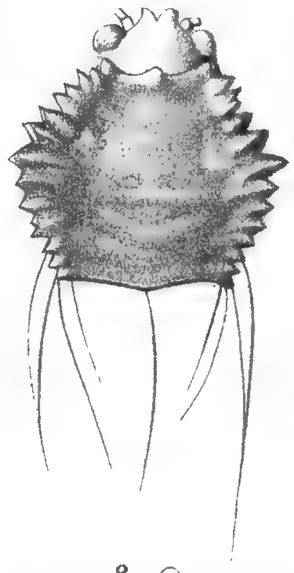
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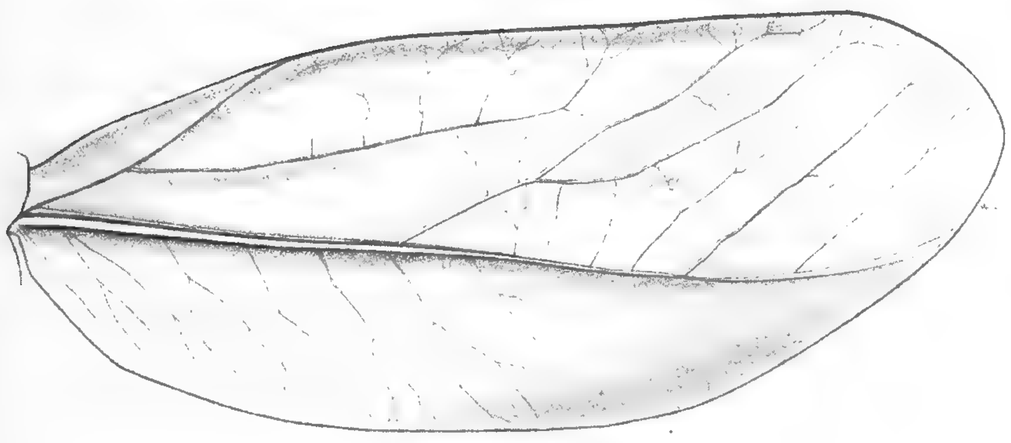
6. ♂



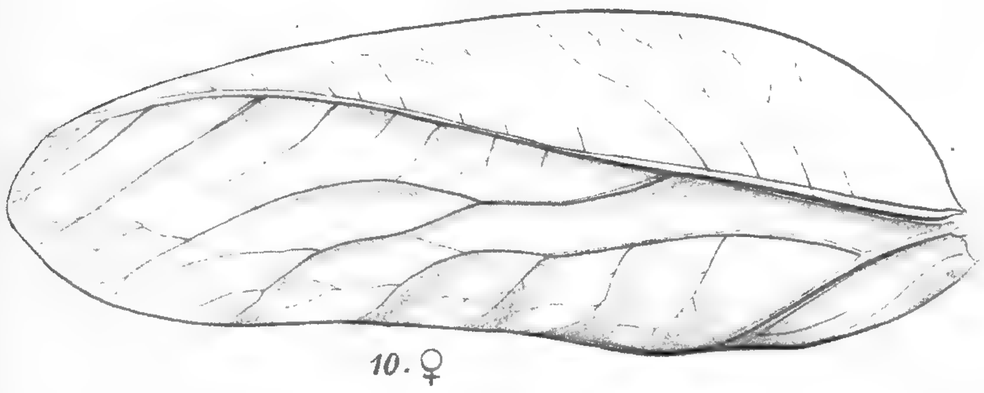
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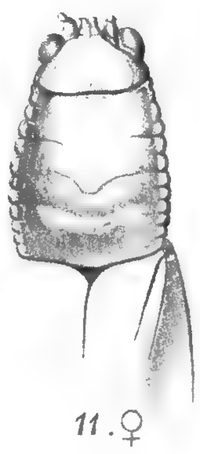
8. ♀



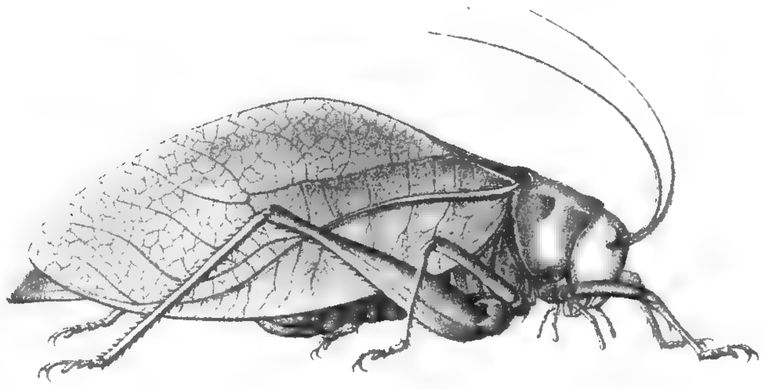
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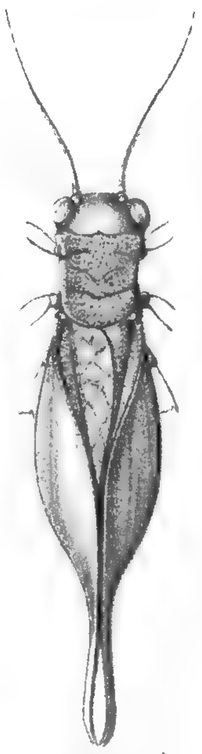
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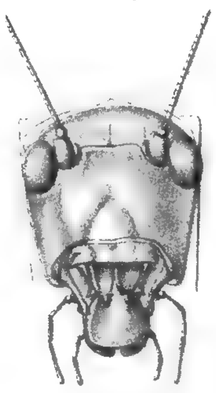
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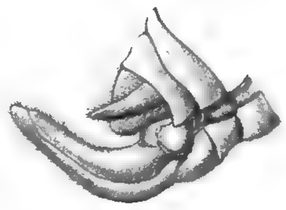
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13. ♀



14. ♀

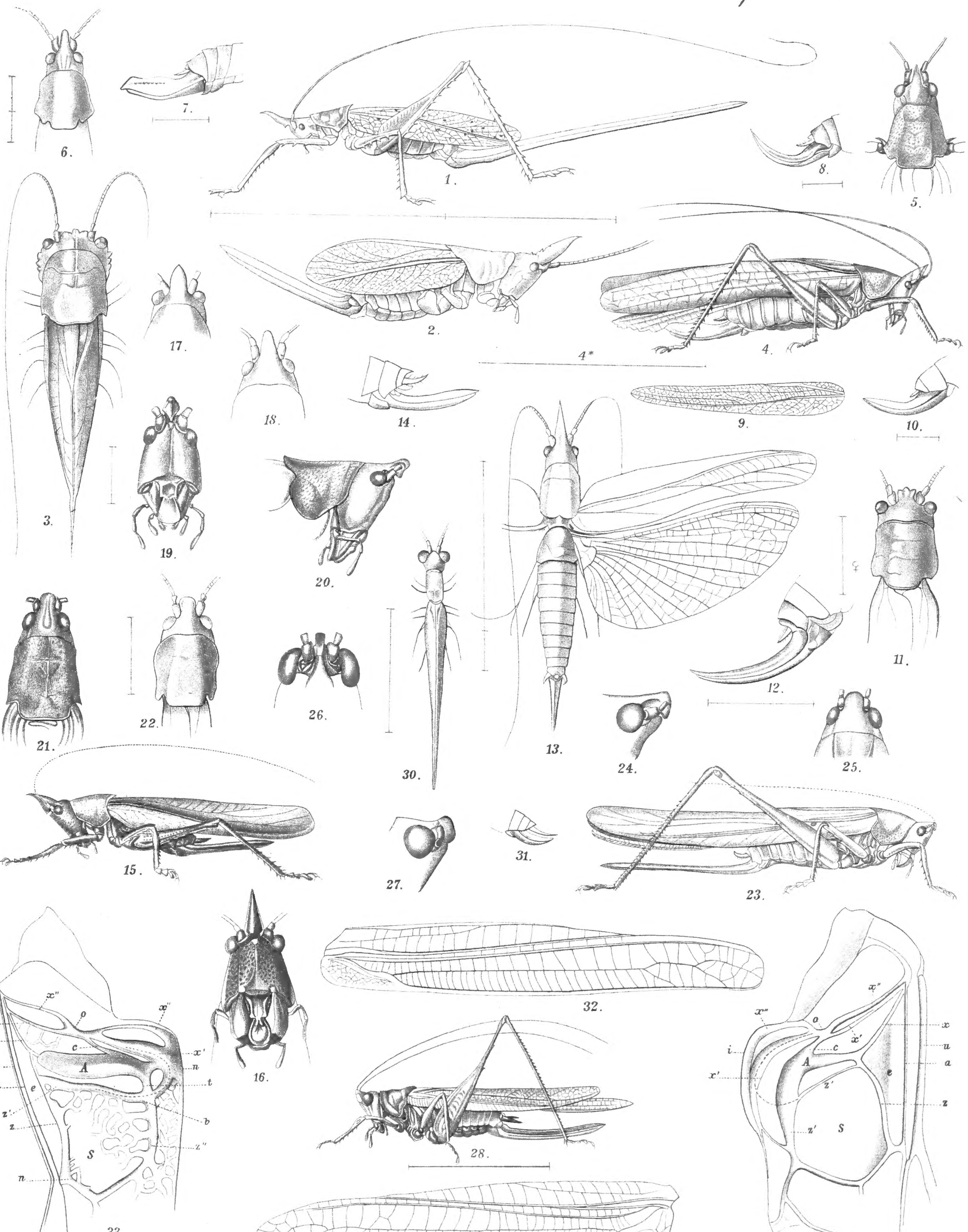


15. ♀

1. PEUCESTES CORONATUS.
2. PEUCESTES LATIPENNIS.
3 - 5. PEUCESTES DENTATUS.
6 - 9. PEUCESTES CHAMPIONI.
10, 11. POSIDIPPUS VALIDUS.
12 - 15. LOBOPHYLLUS LEGUMEN.

Lunel et Nicolet del.

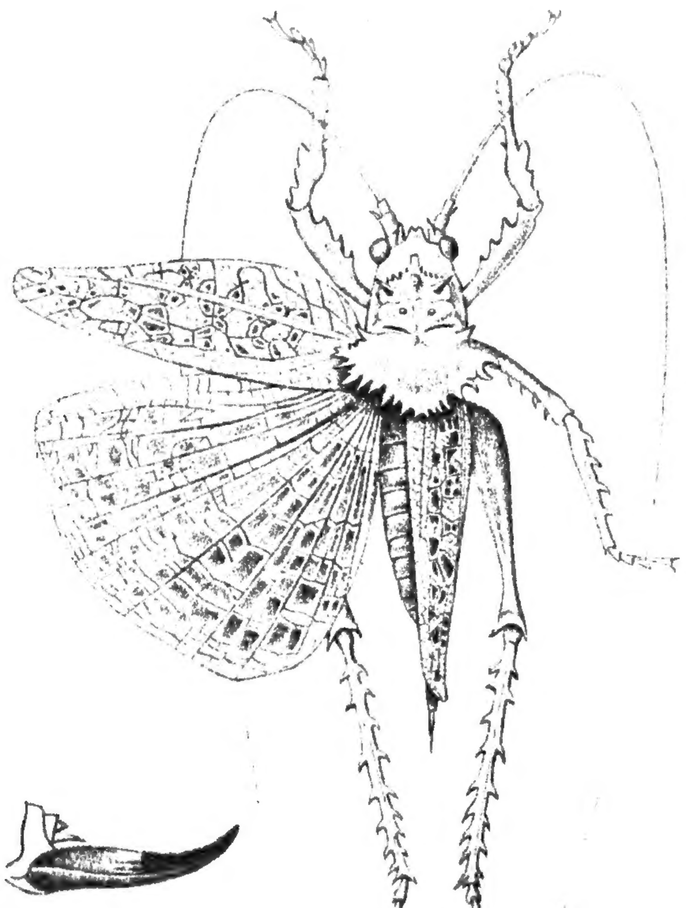
Th. Bannwarth, lith. et imp. Vienna.



1. COPIOPHORA AZTECA.
2. COPIOPHORA CEPHALOTES.
3, LIROMETOPUM CORONATUM.
4, 5. ERIOLUS MEXICANUS.
6, 7. ERIOLUS CONSOBRINUS.
8. ERIOLUS FALCATUS.
9, 10. ERIOLUS ACUTIPENNIS.
11, 12. BASILEUS DIADEMATUS.
13, 14. PYRGOCORYPHA ROGERSI.
15, 16. PYRGOCORYPHA SALLEI.
17. PYRGOCORYPHA INERMIS.
18 - 20. CONOCEPHALUS IRRORATUS.
21. CONOCEPHALUS MEXICANUS.
22. CONOCEPHALUS TRISTANI.
23, 24. CONOCEPHALUS NIETOI.
25. CONOCEPHALUS LATICEPS.
26, 27. XIPHIDIUM RESINUM.
28. XIPHIDIUM SALTATOR.
29. THYSDRUS VIRENS.
30 - 32. THYSDRUS INFIRMUS.
33, 34. COPIOPHORA CULTRICORNIS.

Ed. Mercier del

Th. Bannwarth, lith. et imp. Vienna.

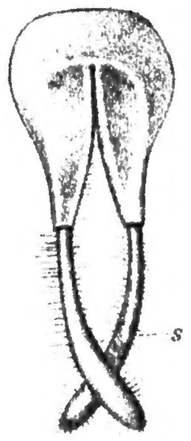


3.

2. ♀



5.



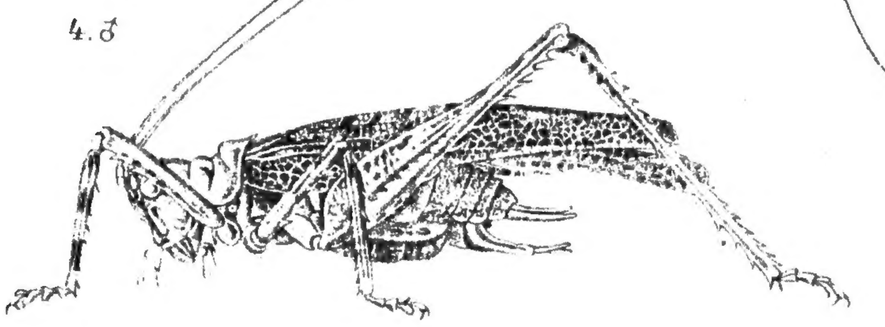
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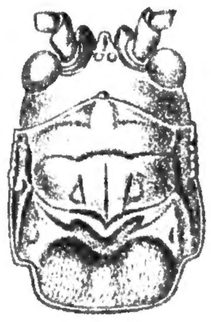
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8. ♂



9.



10. ♀



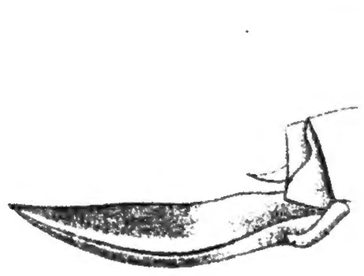
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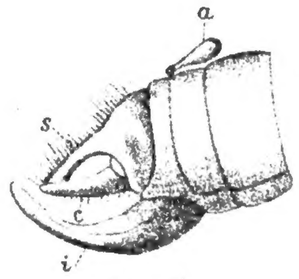
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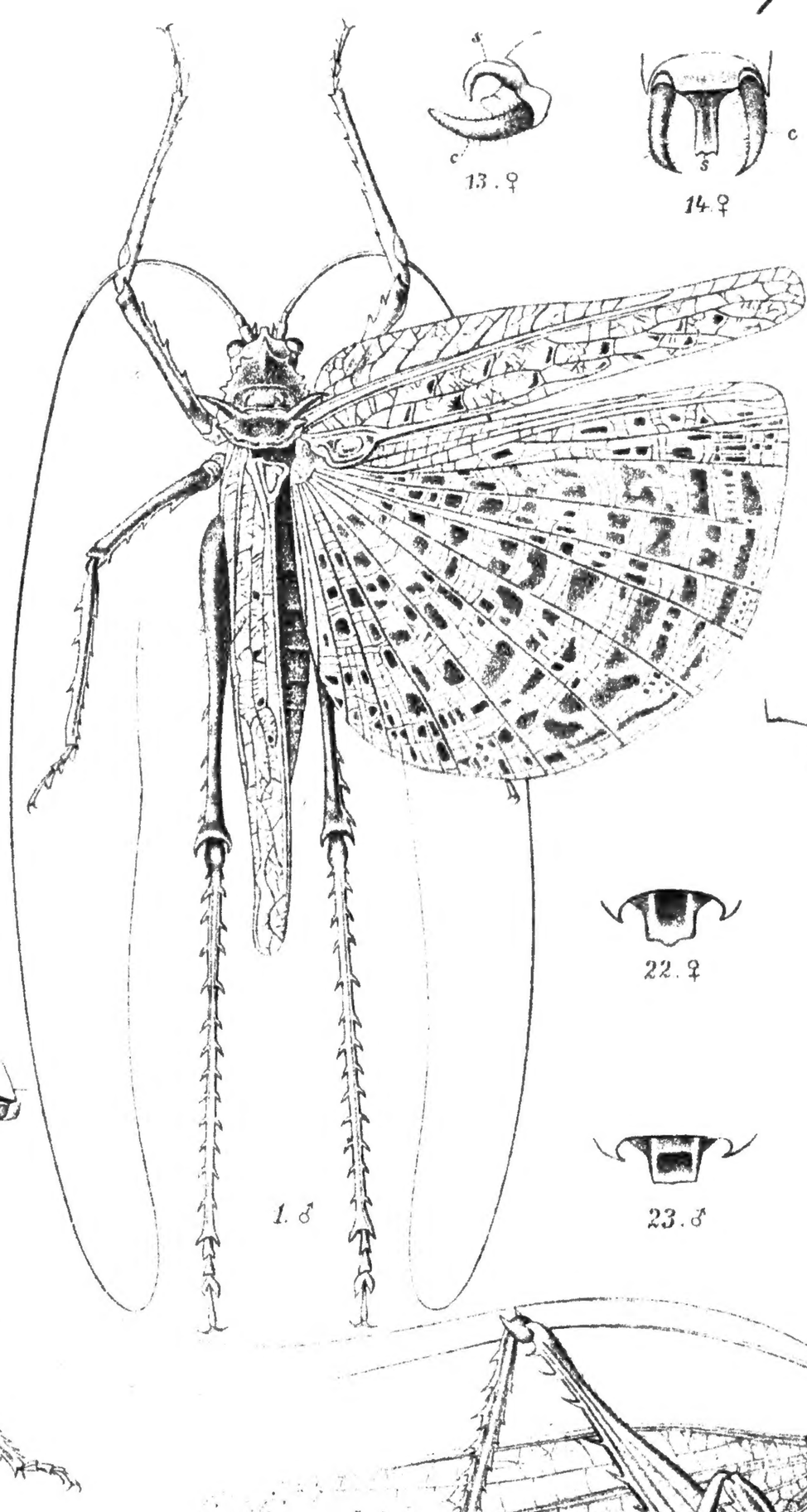
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26. ♀



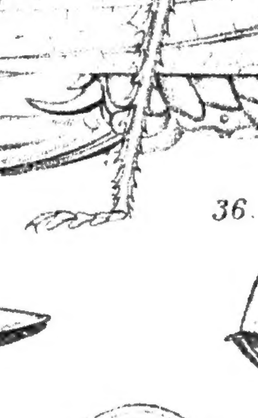
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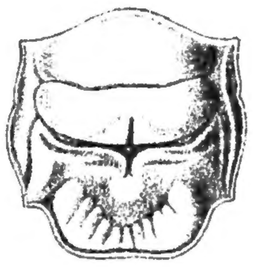
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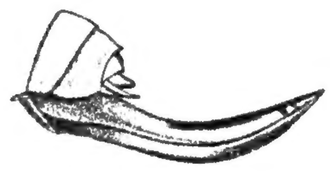
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34. ♀



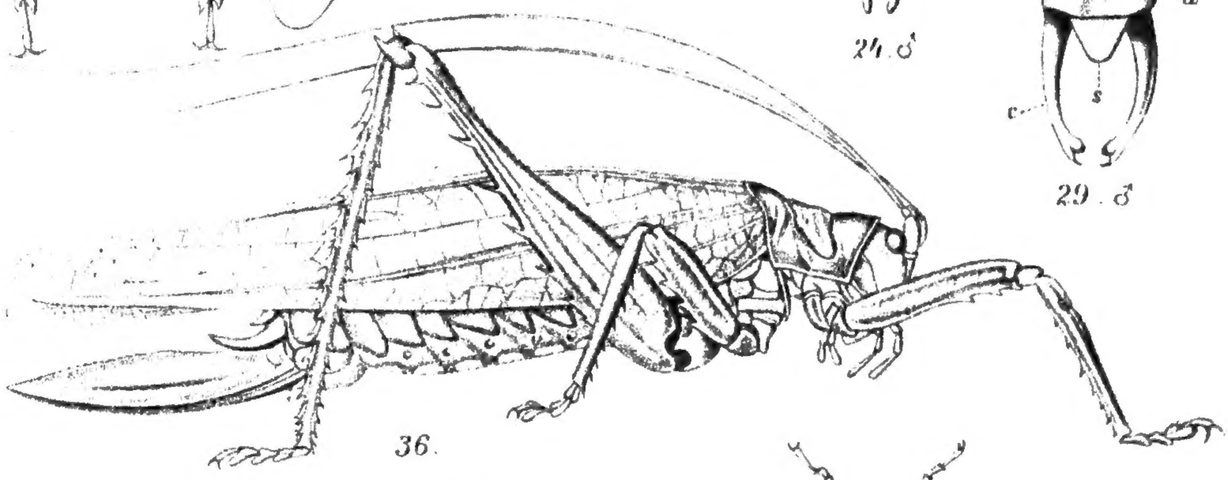
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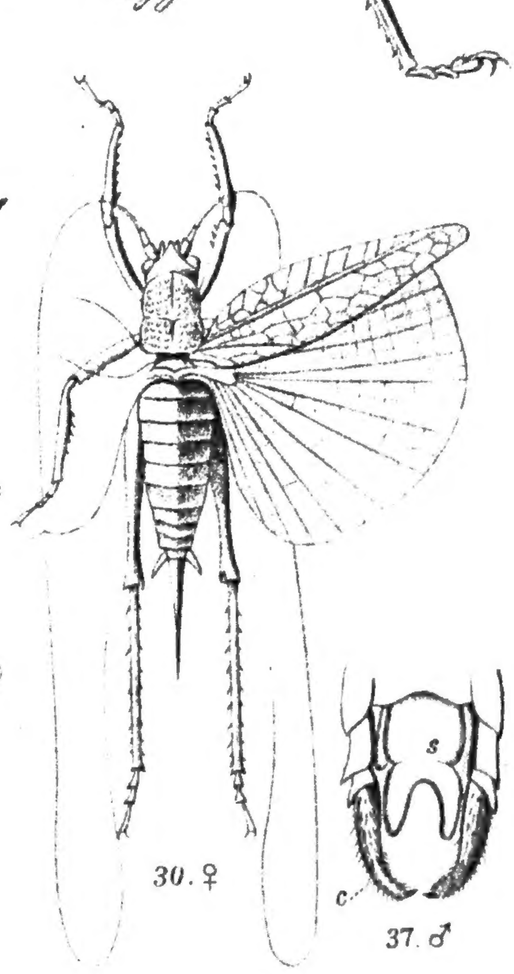
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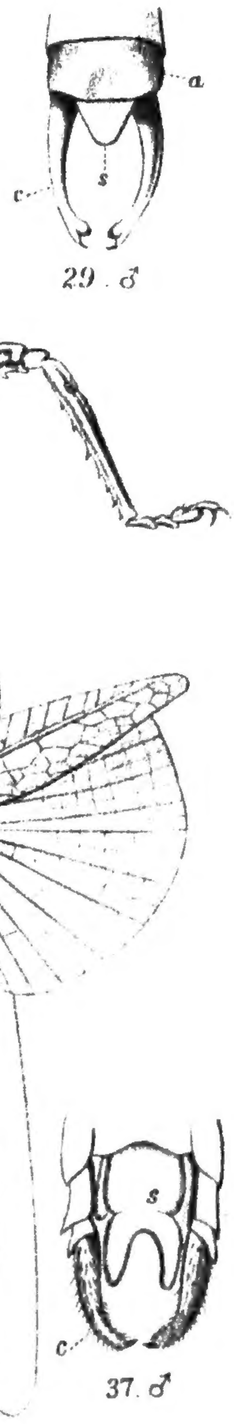
32. ♂



36.



30. ♀



37. ♂

13. ♀

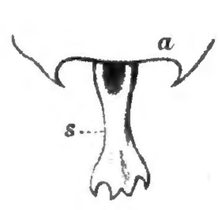
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15. ♂



16. ♀



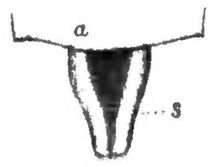
17. ♂



18.



19. ♂



20. ♀

22. ♀



21. ♂

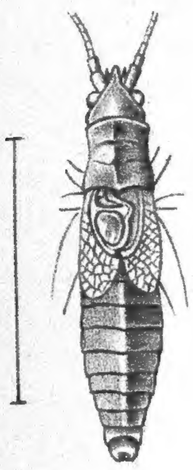
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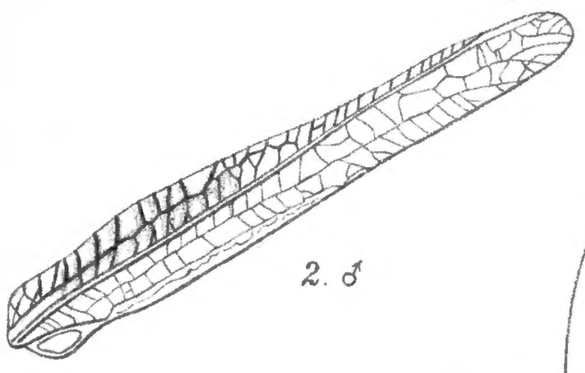
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Ed. Mercier del.

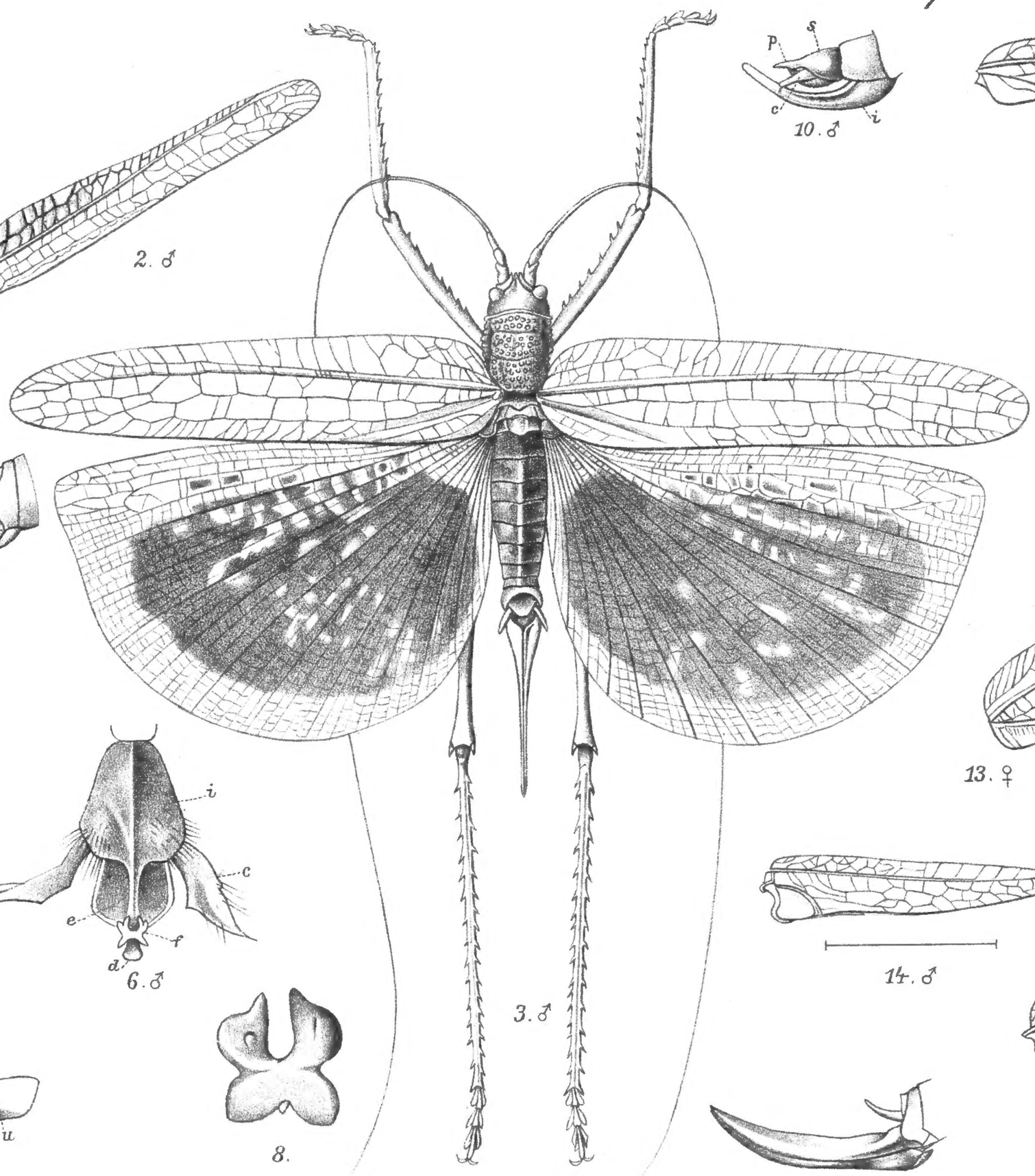
Th. Bannwarth lith. et imp. Vienna.



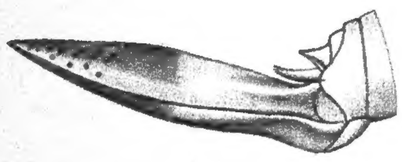
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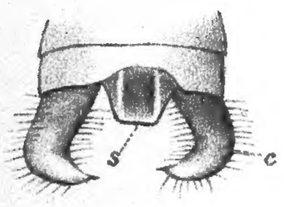
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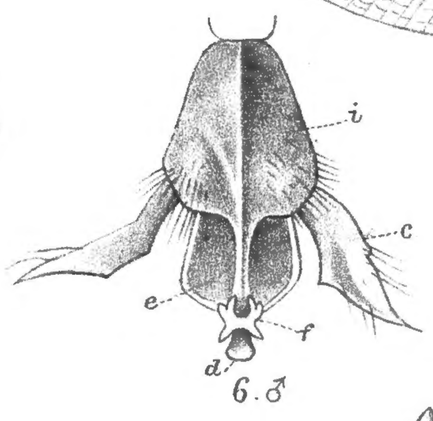
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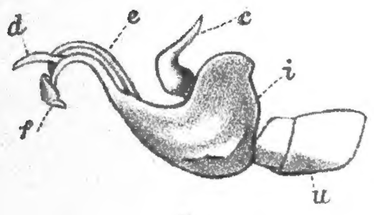
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5. ♂

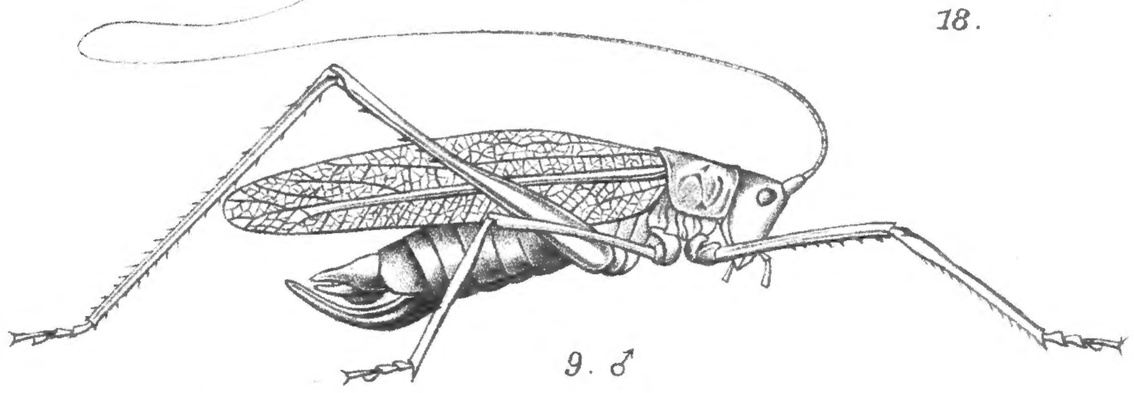


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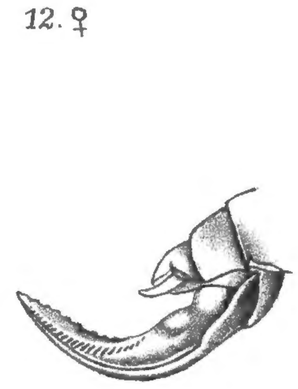
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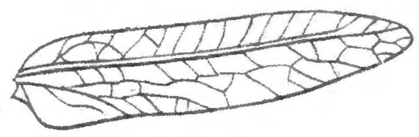
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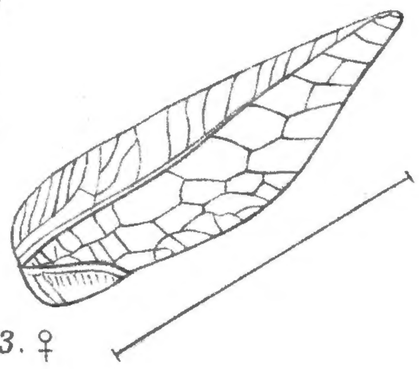
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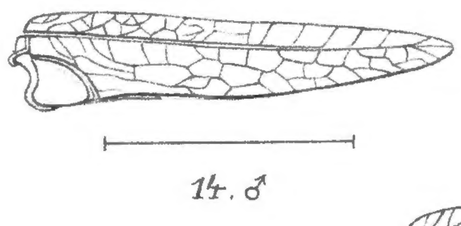
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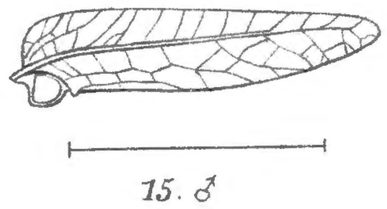
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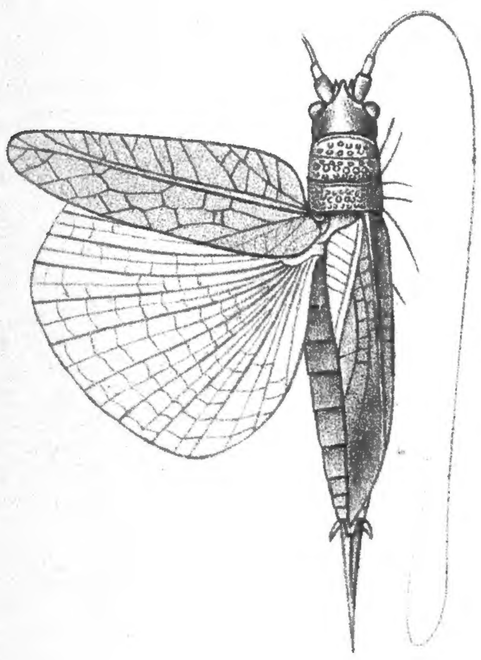
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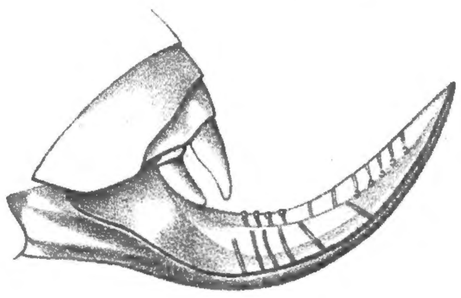
14. ♂



15. ♂

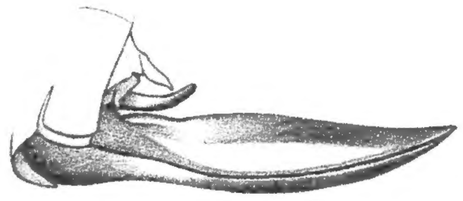


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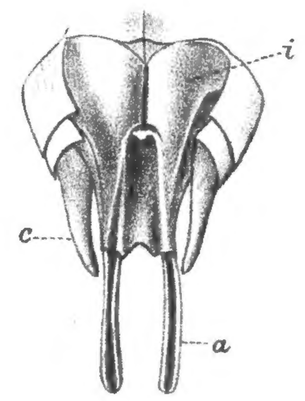


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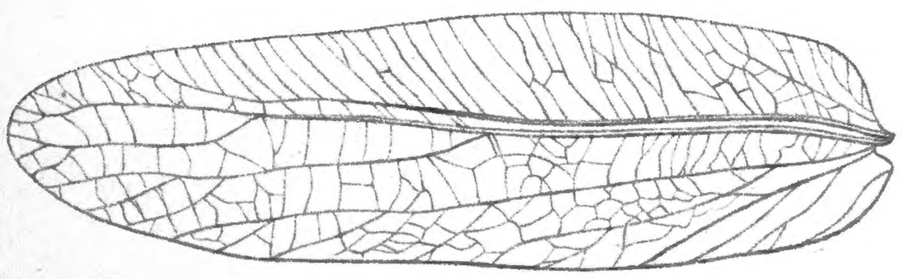


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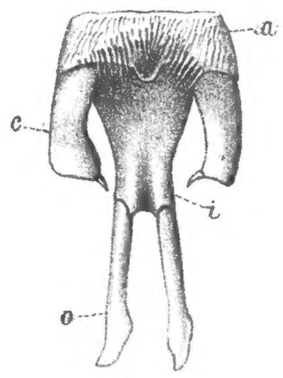


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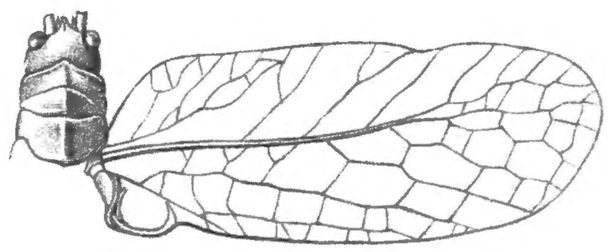
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21. ♀



23. ♂

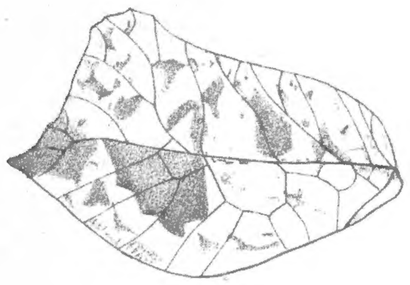


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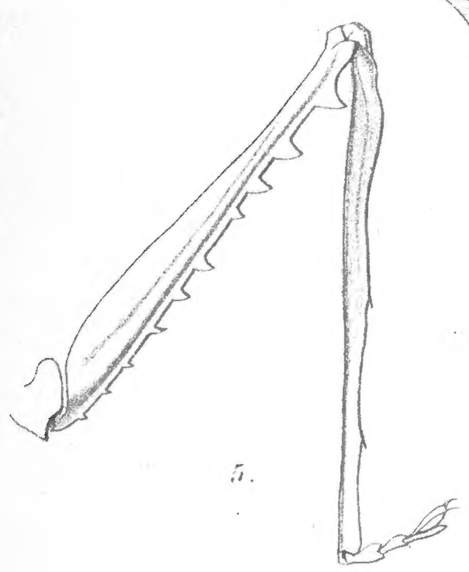
1. NANNOTETTIX MARGINATUS.
2. ISCHNOMELA GRACILIS.
3—8. EUACRIS PICTIPENNIS.
9—12. SCOPIORUS NIGRIDENS.
13. SCOPIORUS LANCIFOLIUS.
14. SCOPIORUS CARINULATUS.
15. SCOPIORUS MUCRONATUS.
16,-17. CALLOXIPHUS CHAMPIONI.
18. DIOPHANES PERSPICILLATUS.
19, 20. DIOPHANES ROSESCENS.
21—23. DIOPHANES REX.
24. LOPHASPIS SCABRIUSCULA.

Ed. Mercier del.

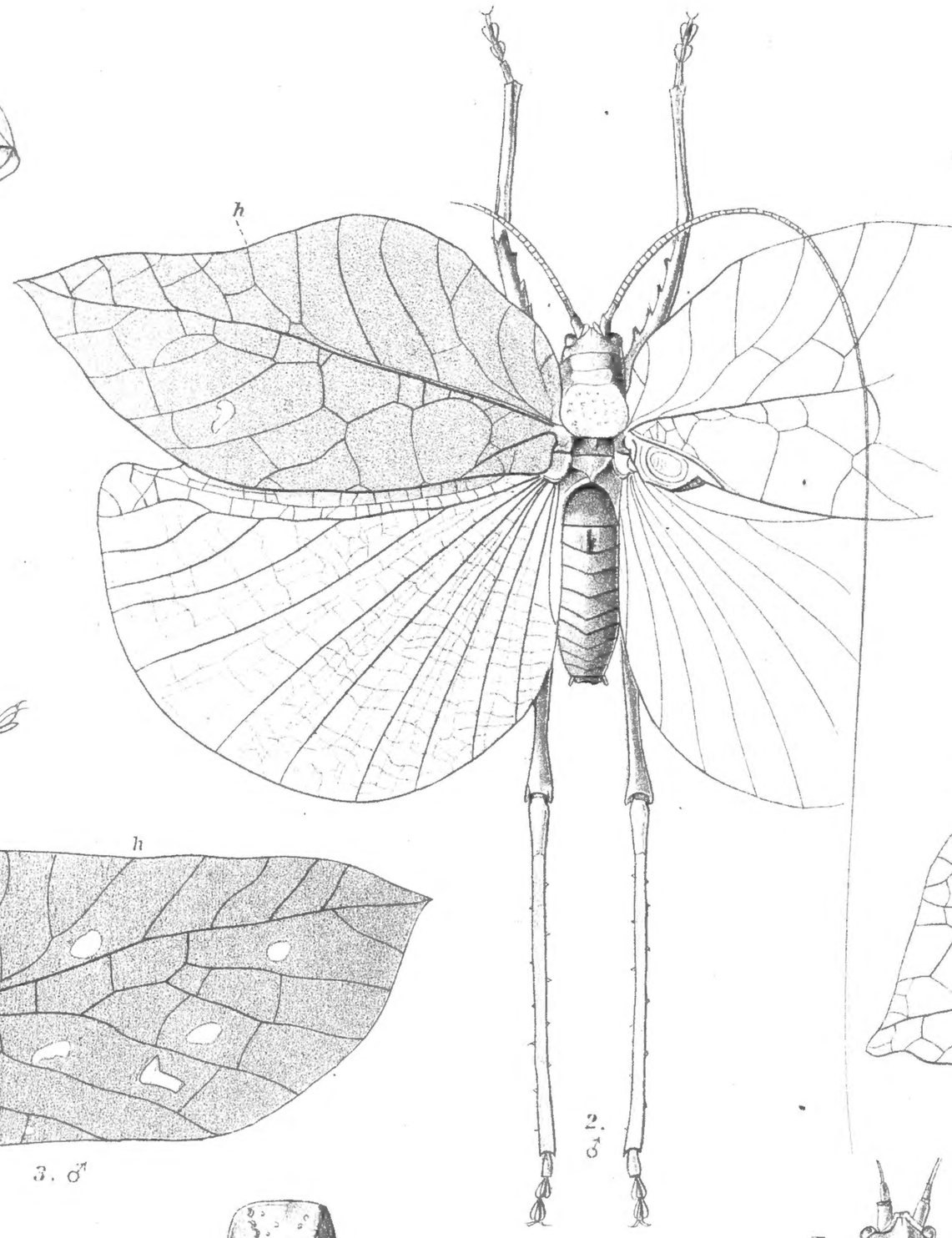
Th. Bannwarth lith. et imp. Vienna.



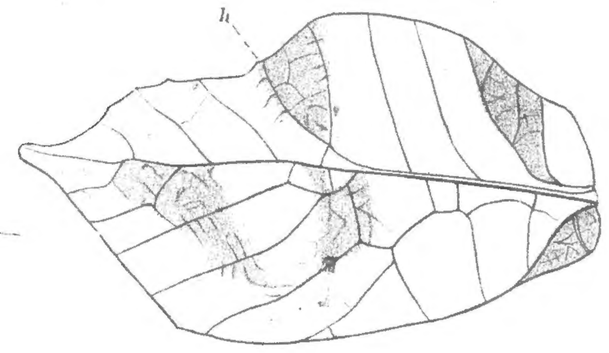
6. ♀



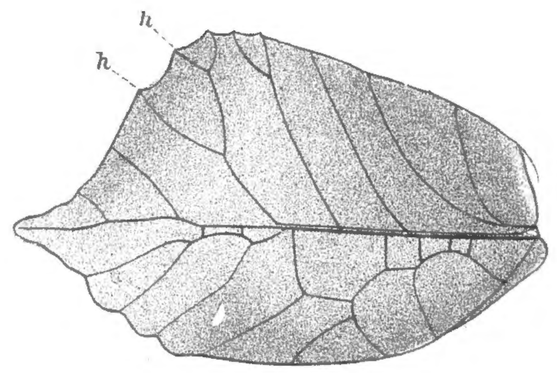
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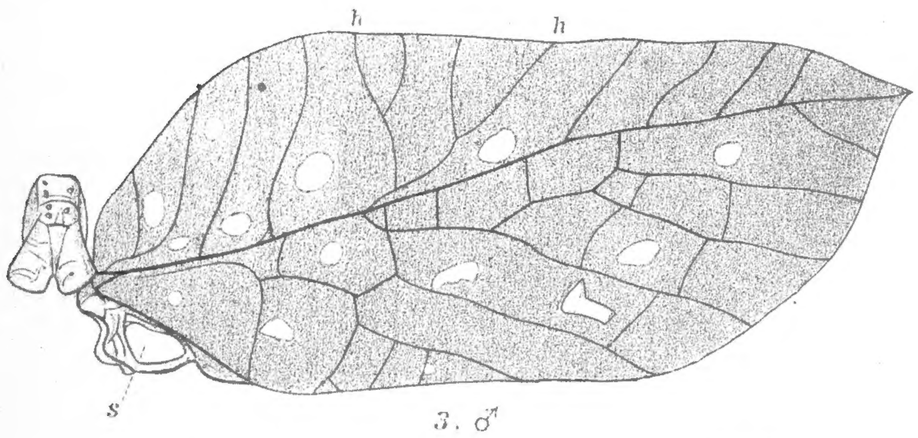
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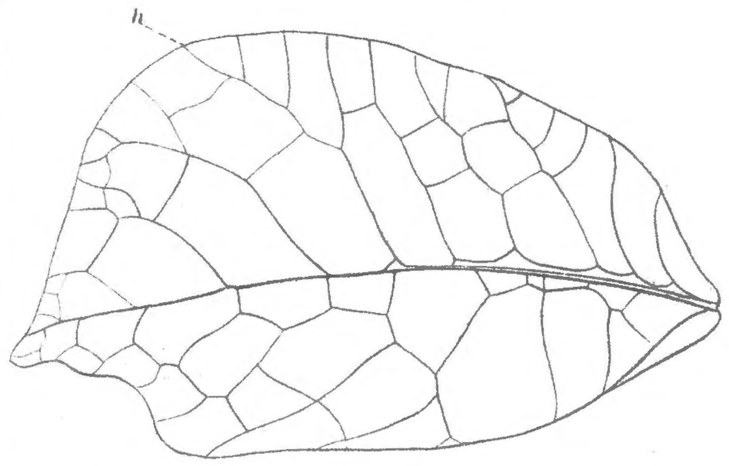
1. ♂



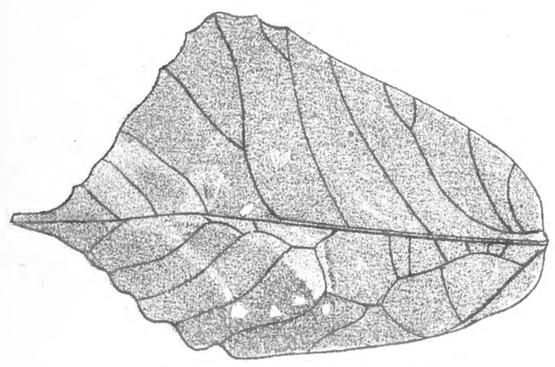
7. ♀



3. ♂



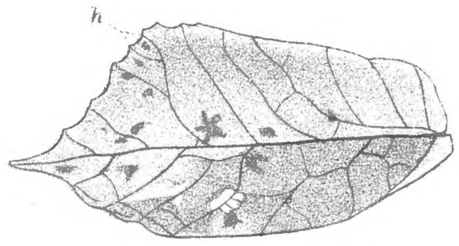
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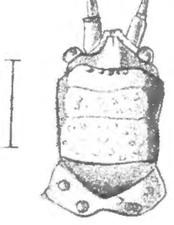
8. ♀



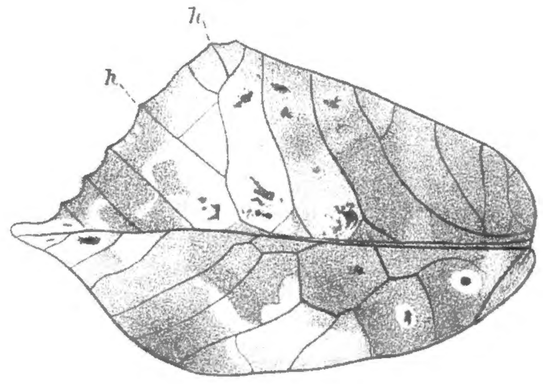
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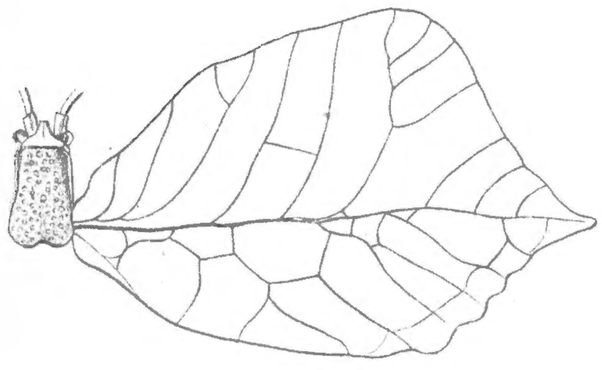
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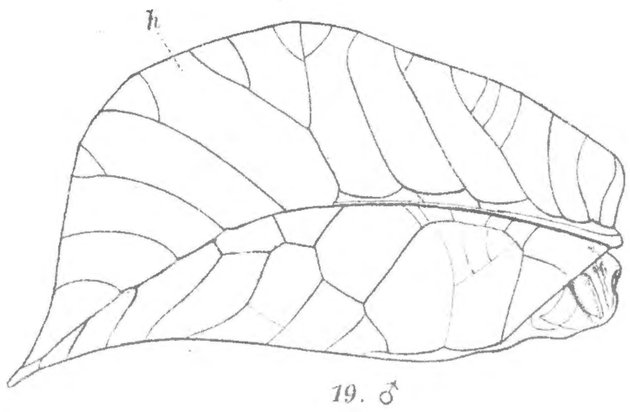
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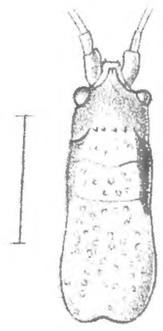
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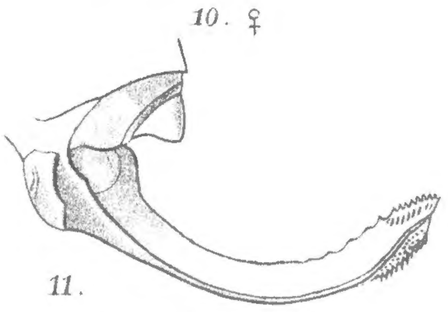
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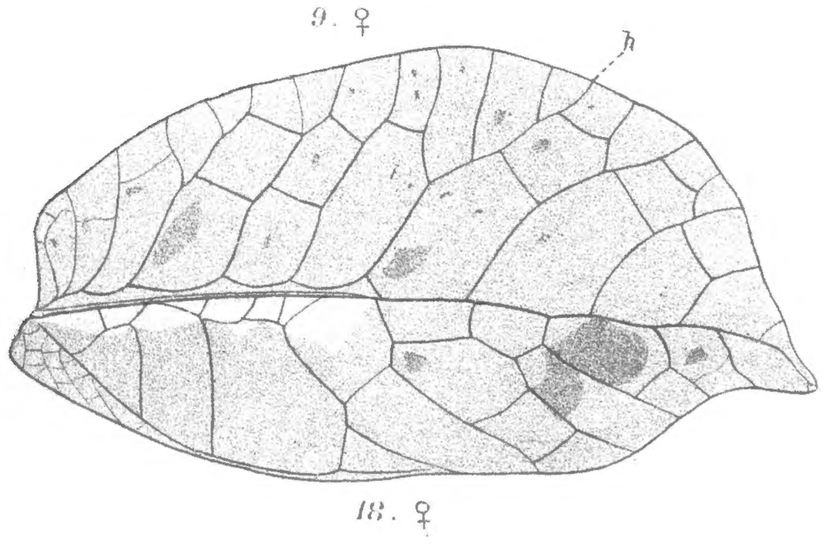
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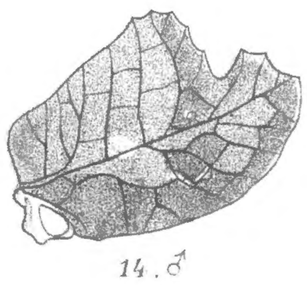
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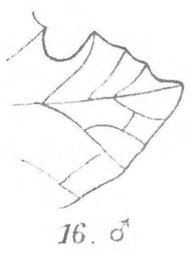
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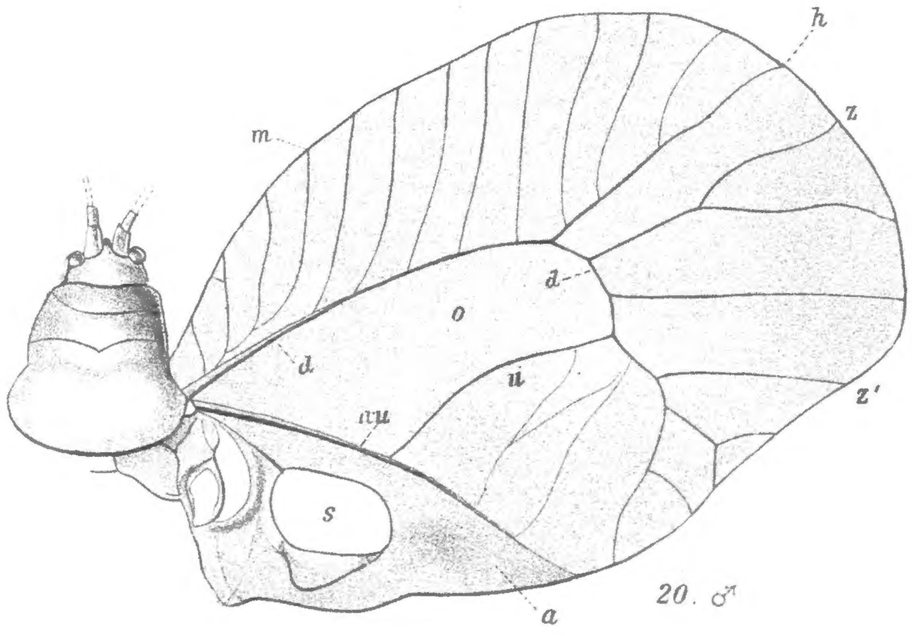
18. ♀



14. ♂



16. ♂



20. ♂

1. TANUSIA HOEGEI.
2. TANUSIA OCHRACEA.
3—5. CELIDOPHYLLA ALBIMACULA.
6. TYPOPHYLLUM FLAVIFOLIUM.
7. MIMETICA MORTUIFOLIA.
8. MIMETICA BRUNNERI.
9. MIMETICA SUBINTEGRA.
10, 11. MIMETICA MARMORATA.
12, 13. MIMETICA ARIDIFOLIA.
14—16. MIMETICA SICCIFOLIA.
17. CHLOROPHYLLA AMPLIFOLIA.
18. CHLOROPHYLLA FAGIFOLIA.
19. CHLOROPHYLLA ARCUATA.
20. CYCLOPTERA CARINIFOLIA.

Ed. Mercier del.

Th. Bannwarth lith. et imp. Vienna.